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An Examination of the Association Between Mega-fund Managers' Investments in the Middle Market and Middle-Market Fund Managers' Investment Opportunities

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An Examination of the Association Between Mega-fund Managers' Investments in the Middle Market and Middle-Market Fund Managers' Investment Opportunities

Abstract

In the past decade, US middle-market private equity has experienced an increase in fundraising and buyout activities. At the same time, many mega-fund managers have gradually entered the middle market, hoping to create value by focusing on operational improvement in middle-market companies. The entrance of mega-fund managers into the middle market likely has had an impact on middle-market fund managers, who are the biggest players in the middle market. Given the limited existing literature on middle-market private equity, this research intends to fill in the gaps by analyzing the association between increasing mega-fund managers' interest in the middle market and middle-market fund managers' investment opportunities. The results will provide guidance for middle-market fund managers and mega-fund managers to make strategic decisions in the middle market. To analyze data from Preqin, I used Wilcoxon/ Kruskal-Wallis Test and Median Test to measure whether there is a statistically significant difference in mega-fund managers' share of the middle market before and after 2008. This research concludes that mega-fund managers' expansion in the middle market, especially in the lower middle market and core middle market, is associated with fewer deal opportunities for middle-market managers during the past decade.

Keywords

private equity, middle market, fundraising, buyout, deal, mega-fund

Disciplines

Corporate Finance | Finance and Financial Management

AN EXAMINATION OF THE ASSOCIATION BETWEEN MEGA-FUND MANAGERS'
INVESTMENTS IN THE MIDDLE MARKET AND MIDDLE-MARKET FUND
MANAGERS' INVESTMENT OPPORTUNITIES

By

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An Undergraduate Thesis submitted in partial fulfillment of the requirements for the
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SECTION I: INTRODUCTION

1.1 Project Overview

Since the first private equity firm was founded in the mid-twentieth century, private equity managers have mainly used leveraged buyouts to achieve returns during the course of a few years (Gordon 2012). A “leveraged buyout” is a strategy to acquire a company using a significant amount of borrowed money. Traditionally, managers derive returns from the use of leverage. Nowadays, managers have increasingly focused more on the additional value coming from the operational improvement of their portfolio companies. The aggregated fundraising value in US private equity has increased remarkably since the 2008 financial crisis (Figure 12). The industry has changed drastically over time and it is critical to understand its dynamics to excel.

Middle-market funds are funds that invest in US-based companies acquired through buyout transactions between \$25 million and \$1 billion (Pitchbook 2017)¹. In recent years, the aggregated middle-market fund size and the number of middle-market private equity funds have grown drastically (Pitchbook 2017). Similarly, US middle-market private equity buyout deals have increased significantly since 2009 in terms of deal counts and deal value (Pitchbook 2017).

Mega-fund managers have partially contributed to the increasing middle-market activities². More mega-fund managers focus on operational improvement to create value and

¹ Minority deals are not included. A minority deal is when the buyer acquires less than 50% of the company. Middle-market fund managers are defined as managers who own a majority of middle-market funds.

² Private equity mega-fund is defined as a vehicle with a pooled private capital of \$5bn or more (Pitchbook 2019). Mega-fund managers are defined as managers who run a majority of mega-funds.

they believe that they can better achieve operational improvement in middle-market companies instead of bigger, more mature companies; thus, many mega-fund managers engage in more middle-market activities (Downer, Haggerty, and Benham 2011). These trends have changed the private equity industry landscape in the past decade (Figure 5 & 6). The new entrance of mega-fund managers into the middle market likely has had an impact on middle-market fund managers, who are the biggest players in the middle market³. This research aims to examine the association between increasing mega-fund managers' interest in the middle market and middle-market fund managers' investment opportunities.

This research concludes that the middle market is expanding while mega-fund managers are increasing their investments in the middle market after the 2008 financial crisis. Mega-fund managers' expansion in the middle market, especially in the lower middle market and core middle market, is associated with fewer deal opportunities for middle-market managers during the past decade.

1.2 Contribution

Given the limited existing literature on middle-market private equity, this research intends to fill in the gaps by analyzing the association of mega-fund managers' entrance into the middle market and middle-market fund managers' investment opportunities. The results will have important implications for participants in the private equity field such as fund managers.

Some researchers in this field focus on studying private equity performance and whether private equity funds outperform the stock market (Kaplan and Schoar 2005; Ljungqvist and

³ Middle-market fund managers are defined as managers who own a majority of middle-market funds

Richardson 2003; Phalippou and Gottschalg 2008). Gompers & Lerner (2000) and Loos (2007) examine the determinants of funds' returns and provide guidance on private equity investments. Others analyze managers' fundraising activities and their drivers (Balboa and Martí 2013; Barber and Yasuda 2017). Existing literature on the middle market is very limited and mostly focuses on two areas. Some researchers study the trend of the growing middle market and the trend of mega-fund managers' growing interest in the middle market (Fugazy 2015; Downer, Haggerty, and Benham 2011). Others analyze fund performance specifically in the middle market (Mathis 2017). Meanwhile, not much attention has been given to middle-market fundraising activities. Acknowledging that there is little research done in the middle market, I intend to explore how mega-fund managers' entrance into the middle market is associated with the middle-market fund managers' investment opportunities such as fundraising and buyout deals.

This paper answers questions that are important to participants in the private equity field. First, as the major players of the middle market, middle-market fund managers want to understand whether their investment opportunities have been impacted by mega-fund managers' activities. Are the middle-market fund managers having more difficulty with fundraising or finding deals? Do they have fewer opportunities in the middle market space after mega-fund managers entered the middle market? This paper intends to answer these questions which are important to middle-market fund managers. It also provides them with further insights into the extent to which they are influenced by mega-fund managers' activities and whether certain types of funds are more vulnerable to this trend. Understanding the trends and their impacts allows managers to better identify future directions and develop strategies to boost returns. For those managers that haven't entered the middle market, this paper can provide some guidance on whether they should enter the middle market and compete with both mega-fund managers and

middle-market fund managers. Secondly, this research also provides guidance for mega-fund managers as well. Understanding the current trends allows mega-fund managers to better make strategic decisions in the middle-market field. They can better assess whether the middle market is still a profitable opportunity.

SECTION II: OVERVIEW

2.1 Literature Review

2.1.1 Private Equity Overview

Private equity managers adopt the investment strategy of leveraged buyouts to realize returns over a short period of time⁴. To carry out leveraged buyouts, private equity managers, who are general partners, raise a pool of capital committed by investors, who are limited partners. Managers then use cash, equity, and debt to fund leveraged buyouts of targeted portfolio companies. By bringing in expertise in management, operations, and finance, managers can achieve high returns after exiting the investments after a number of years. Ever since the private equity field has gained more attention in the finance industry, researchers have increasingly studied topics such as performance and drivers of fund returns.

2.1.2 Private Equity Performance

Investors choose to invest in private equity mainly because it promises superior returns. Many researchers have examined whether the private equity field delivers returns as it promises. The results are mixed. Using a relatively large cash flow dataset of private equity funds over

⁴ The average holding periods for private equity managers has increased from 4.1 years in 2008 to 5.9 years in 2014 (Strumillo and Lawrence 2015).

twenty years, Ljungqvist and Richardson (2003) conclude that private equity generates excess annual returns net of fees of approximately 5% - 8% relative to the stock market. However, Kaplan and Schoar (2005) show that the average private equity fund returns net of fees do not exceed S&P 500 returns, though there is a significant discrepancy in returns across different funds. Moreover, Phalippou and Gottschalg (2008) provide evidence that the average fund performance net of fees is approximately 3% below S&P 500 returns.

Achleitner, Braun, Engel, Figge, and Tappeiner (2010) show that one-third of private equity returns come from the use of leverage, while two-thirds of returns come from operational and market effects. Ljungqvist and Richardson (2003) suggest that the excess returns also come from compensation for holding illiquid investments over a long period. Similarly, Diller and Kaserer (2009) identify illiquidity as one of the key drivers of private equity returns. Fund performance is also dependent on the procyclicality of different industries and established fund managers are less sensitive to cyclicity than new fund managers (Kaplan & Schoar 2005). Interestingly, Kaplan and Schoar (2005) conclude that returns persist across subsequent funds of private equity managers because better performing managers are more likely to raise larger funds in the future.

2.1.3 Private Equity Fundraising

Private equity managers seek capital commitments from limited partners directly or through feeder funds. Limited partners are not required to invest capital until the investments occur⁵.

⁵ In addition, fund managers usually contribute some of their own capital into their funds.

Placement agents promote private equity funds to potential limited partners. These agents create value for private equity managers through providing information, screening, and certification (Cain, Davidoff, & McKeon 2013). In the 1990s and 2000s, fund managers generally had small or non-existent investor relations departments; thus, placement agents played a critical part in many fund managers' fundraising activities (Private Equity International 2016). Nowadays, mega-fund managers usually rely on their existing relationship and reputation to raise funding (2016). The core market for placement agents has now switched to the middle market, where a lot of asymmetric information exists, and investor relations departments are small (2016). As a result, middle-market managers use placement agents more often than mega-fund managers in recent years. According to a study conducted by Grant Thornton, approximately 65% of middle-market fund managers use placement agents to raise funding (Prince 2016). In addition, these managers use their personal relationships to raise capital. More specifically, 80% of middle-market fund managers reach out to institutions such as endowments and pension funds. Around 75% of these managers consider family offices as good sources of capital although they are difficult to reach. 40% of the managers raise capital from government/sovereign wealth funds, and 30% of the managers reach out to qualified individual investors.

2.1.4 Middle-Market Private Equity

Scholars such as Mathis (2017) and Gabbert (2012) agree that middle-market deals account for the majority of private equity activities. Specifically, in the second-quarter 2019, middle-market activities made up 82.4% of total buyouts in the US (Pitchbook 2019). US middle-market deals have increased significantly since 2009 in terms of deal counts and deal value, which is likely due to the accumulation of un-invested dry powder, low-interest rate, and

continued economic expansion (Mathis 2017). In 2018, middle-market buyouts have reached record-setting figures of 2,978 deal counts and \$435.2 billion deal value, which have increased 15.01% and 17.24% from 2017, respectively (Pitchbook 2019).

Mega-fund managers have partially contributed to such increasing middle-market activities. Realizing that it is not enough to only use leverage to drive returns, many mega-fund managers have increasingly focused on operational improvement of the portfolio companies in recent years. Many scholars such as Jacobius (2014) and Fugazy (2015) argue that there are a significant number of investible companies in the middle market, resulting in market inefficiency and greater room for return improvement. There is less available information in the private middle market, which provides opportunities for capturing returns due to the large spreads between the buyout price and the value that an efficient market would suggest (Downer, Haggerty, and Benham 2011). Because middle and lower middle-market buyouts yield the best returns historically, mega-fund managers have expanded businesses into the middle market⁶ (2011).

However, Jacobius (2014) opposes to the above argument because the middle market has become more efficient in recent years. Many mega-fund managers have seen such opportunities due to market inefficiency since 2009, resulting in increasing competition in the middle market. Buyout prices have subsequently increased, and private assets have become more efficient; thus, managers are facing more challenges to generate greater investment returns (2014). According to Mathis (2017), private equity average internal rate of return fell from 22.4% in the 1980s to 16%

⁶ The middle-market funds are further broken down into lower-middle-market funds (\$25 million to \$100 million), core-middle-market funds (\$100 million to \$500 million), and upper-middle-market funds (\$500 million to \$1 billion) (2017).

in the 2000s and realized multiples of invested capital declined from 3.7 to 1.7. Therefore, mega-fund managers must implement effective strategies that combine effective deal sourcing and operational improvements to achieve a certain level of returns (2017). Fugazy (2015) notices that a lot of mega-fund managers have formed teams specifically dedicated to middle-market buyouts. Additionally, mega-fund managers invest in the middle market differently: some managers such as the Carlyle Group have raised funds dedicated to the middle market, while other managers such as Blackstone directly incorporate middle-market buyouts into their flagship funds (Jacobius 2014). In summary, mega-fund managers have rapidly entered and expanded into the middle market in the past decade, but whether they have generated more excess returns from their middle-market investments is questionable.

2.1.5 Impact on Middle-Market Fund Managers

Mega-fund managers' increasing interest in the middle market may have an impact on middle-market fund managers. First, mega-fund managers are capable of raising mega-funds because they have a lot of experience, which is well-known among limited partners (Pitchbook 2019). Consequently, the brand names of many mega-fund managers are often associated with strong performances (2019). Their experience and their well-known brand name can naturally attract investors when mega-fund managers enter the middle market, which might negatively impact middle-market fund managers (McKinsey 2019). In addition, mega-fund managers have gained trust from a lot of limited partners because of their years of excellent performance. With these relationships, mega-fund managers can easily raise middle-market funds.

Secondly, mega-fund managers have an important competitive advantage: scale (Pitchbook 2019). Because they typically operate at a larger scale with a lot more capital than

middle-market fund managers, it is easier for them to close deals in the middle market (2019). As the middle market becomes more competitive in recent years, mega-fund managers can potentially push out middle-market fund managers that have limited resources.

Furthermore, limited partners may prefer to work with mega-fund managers because they offer a variety of funds with different strategies (Pitchbook 2019). Limited partners can invest in both mega-funds and middle-market funds while reducing due diligence costs by limiting the number of relationships with the general partners (Lykken 2019). The one-stop-shop provided by mega-fund managers has put middle-market fund managers at a disadvantage when mega-fund managers and middle-market fund managers compete directly in the middle market.

However, some scholars believe that mega-fund managers are not likely to have an impact on middle-market managers' activities (Mathis 2017). Although mega-fund managers are taking a piece of the market share, the entire middle market is still growing at an unprecedented pace (Figure 1 & 2). While add-ons such as strategic and operational improvements have become much more important, middle-market funds can provide more expertise specifically in the middle market than mega-fund managers (2017). Middle-market fund managers have built years of experience and extensive network in the middle market, which they can leverage in sourcing and screening transactions (Chapman and Klein 2009). In a competitive field like private equity, companies receive many compelling offers from different managers. Some sellers prefer working with familiar middle-market fund managers that have experience in the middle market (Mathis 2017).

2.1.6 Methodologies

Studies on private equity use major database, private equity reports, interviews, and resources obtained from private equity firms. Casey (2017), Gabbert (2012), Mathis (2017), Dartley and Downer (2015), Haggerty (2018), and Benham (2011) use reports such as Pitchbook and databases such as Thomson Reuters. On the other hand, Jacobius (2014) and Fugazy (2015) conduct interviews with private equity professionals. Chapman and Klein (2009) obtain data from interviews with general partners from 13 funds, including detailed financial and strategic data on 288 exited transactions. These researchers focus on descriptive analysis while other scholars such as Ljungqvist and Richardson (2003) perform regression analyses using a large dataset of private equity funds raised from 1981 to 2001.

2.2 Hypothesis Development

Based on existing literature, the entrance of mega-fund managers into the middle market may have an impact on middle-market fund managers. Although middle-market fund managers have more expertise in the middle market, mega-fund managers on average have stronger brand names associated with years of experience, larger scale, and more varieties of funds than middle-market fund managers. Therefore, I would like to test the hypothesis that the trend of mega-fund managers' increasing investments in the middle market is negatively associated with middle-market fund managers' investment opportunities.

SECTION III: DATA & METHODS

3.1 Preliminary Descriptive Data

I examine the expansion of the middle market and the trend of increasing mega-fund managers' investments in the middle market by analyzing middle-market fundraising and deal activities.

Preqin provides financial data and information on alternative asset classes including private equity. It collects data using several methods including web data extraction, direct conversations with fund managers, on and offshore web research, Freedom of Information Act (FOIA) requests and voluntary data contributions by fund managers. Given that Preqin provides a relatively unbiased, comprehensive dataset in such a private sector, I mainly use archival data from Preqin in this research.

The first set of descriptive data includes four time series bar charts from 1995 to 2019. For each of the four graphs, the dependent variable is number of US middle market funds, aggregated US middle market fundraising value, number of US middle market deals, and aggregated US middle market deal value, respectively. These four dependent variables are proxies for the size of US middle market. Analysis of these graphs demonstrates the overall expansion of the middle market in the past decade.

The second set of descriptive data includes two time series bar charts from 1995 to 2019. The dependent variable of the first graph is aggregated US middle market fundraising value raised by mega-fund managers. The dependent variable of the second graph is aggregated US middle market deal value closed by mega-fund managers. These two dependent variables are proxies for mega-fund managers' investments in the middle market. This second set of descriptive data illustrates the general trend of mega-fund managers' investments in the middle market.

3.2 Data on Association between Mega-fund Managers' Increasing Investments in the Middle Market and Middle-Market Fund Managers' Investment Opportunities

Although the preliminary descriptive data indicates mega-fund managers' increasing investments in the middle market, such data does not reveal whether such rise in investments is associated with less opportunities for middle-market fund managers. To assess the impact of mega-fund managers on middle-market fund managers' activities, I evaluate if mega-fund managers have gained a larger proportion of the middle market after the 2008 financial crisis, when both the middle market and mega-fund managers' investments in the middle market started expanding. I use Wilcoxon/ Kruskal-Wallis Tests and Median test to measure whether there is a difference in mega-fund managers' share of the middle market before and after 2008. Regression is not applicable in this case since we only have ten years' data after 2008. I use Wilcoxon test because this non-parametric test can test the null hypothesis that the two samples of repeated measures of mega-fund managers' share of the middle market do not differ. Similarly, I use the Median test because it is also a nonparametric test that test the null hypothesis that the medians of the two samples of mega-fund managers' share of the middle market are identical. A rejected null hypothesis for each test signals that the proportion of the middle market owned by mega-fund managers has increased after 2008, indicating that mega-fund managers have squeezed out middle-market managers' businesses by investing more in the middle market over the past decade.

I use four measures as proxies of the middle market size: number of funds, fundraising value, deal counts, and deal value. Data of these four measures, which is relatively available on Preqin, is the most representative of the size of the middle market. Number of funds and

fundraising value demonstrate whether fund managers are capable of raising sufficient funding from investors to engage in normal private equity activities. I also perform tests using number of funds and fundraising value excluding first time funds as proxies of the middle-market size because Ljungqvist and Richardson (2003) and Balboa and Martí (2003) both mention that first-time managers, in general, have significantly more difficulty raising funds. Deal counts and deal value illustrate if fund managers, on average, are successful in closing leveraged buyout deals. I use mega-fund managers' share of the middle market as the variable in my analysis because it takes into account possible economic and external factors that affect both middle-market managers and mega-fund managers. The comparison between the proportions of mega-fund managers' investments in the middle market before 2008 and after 2008 demonstrate whether middle-market fund managers' investment opportunities have been impacted by mega-fund managers. I use data from 1995 to 2019, if data from the earlier years is not missing, to ensure that there is enough data to carry out the analysis.

Fundraising and deal activities can vary a lot depending on their size; therefore, I break down all middle-market funds into lower-middle-market funds, core-middle-market-funds, or upper-middle-market funds (Pitchbook 2017). I replicate the tests mentioned above for funds in each size category. Additionally, according to Ljungqvist and Richardson (2003), fundraising and deal activities can potentially differ greatly across different industries; thus, I also replicate the same tests for middle-market funds in each major industry in the middle market. These cross-sectional analyses allow me to examine whether the impact of the mega-fund managers' increasing investments in the middle market is more pronounced for certain types of funds.

Finally, I perform Wilcoxon Tests and Median test on two related sets of data: yearly average time to close mega-fund managers' middle-market funds and yearly average time to close middle-market fund managers' funds from 2009 to 2019. If the difference between the two sets of data is significant, I can conclude that mega-fund managers take shorter time to raise funds than middle-market fund managers in the middle market. In addition, a time series bar chart of average time from fundraising launch date to close date of mega-fund managers and middle-market fund managers can provide some insights as well. There are two concerns about this dataset. First, I acknowledge that larger funds require longer period of time to raise funding, yet unfortunately I do not have the breakdown of funds among lower, core, and upper middle markets. Secondly, some mega-fund managers do not set up a separate fund for middle-market deals; instead, they use their flagship funds to buy out middle-market companies. The data I collect does not include these instances.

SECTION IV: RESULTS

4.1 Descriptive Results

For the past decade, fundraising and deal activities in the US middle-market private equity have grown significantly. During the years 2010-2019⁷, number of US middle-market funds has increased by an average of 2.39% (2.84% excluding first-time funds) and aggregated fundraising value has risen by an average of 5.87% (6.44% excluding first-time funds) (Figure 1 & 2). Aggregated fundraising value of first-time fund has grown by 3.43% on average during the past decade (Figure 13). From 2010 to 2019, US middle-market deal counts have increased by

⁷ Data from year 2009, including growth rates from 2009 to 2010, is excluded. The industry was still in recovery from the 2008 financial crisis during 2009; therefore, growth rates from 2009 to 2010 are not reflective of normal industry performance.

2.50% on average and US middle-market deal value has grown by 9.45% on average (Figure 3 & 4). Additionally, as presented in Figure 2 and 4, on average, mega-fund managers' fundraising value is only 9.21% of total middle-market fundraising value while mega-fund managers' deal value is 34.05% of total deal value. The discrepancy in the proportions is likely because some mega-fund managers use existing mega-funds to engage in their middle-market buyout deals (Jacobius 2014).

In general, the middle market has experienced a steady expansion in terms of both fundraising activities and deal activities during the past decade. As seen in Figure 1, fundraising activities have slightly slowed down in the past two years, likely due to the accumulation of dry power in the middle market, and concerns about a possible recession in the future.

Mega-fund managers have focused more on the middle market since the 2008 financial crisis. As shown in Table 2, Table 2, and Figure 5, during 2010 - 2019, the number of middle-market funds owned by mega-fund managers has increased by an average of 14.38% and mega-fund managers' middle-market fundraising value has risen by an average of 30.83%. As evident in Table 7, Table 8, and Figure 6, during the same period, mega-fund managers' middle-market deal counts have grown by 7.50% and mega-fund managers' aggregated deal value has increased by 22.83% on average. In general, mega-fund managers have invested more in the middle market as the middle market expands.

Figure 7, 8, and 9 show that average growth rates of lower, core, and upper middle markets during 2010 - 2019 are -0.95%, 3.52%, and 17.94%, respectively. Therefore, most growth in the middle market comes from aggressive expansion in the upper middle market and moderate growth in the core middle market, whereas lower middle market has experienced a

slight decline. This result is consistent with the current situation: due to a large amount of accumulated dry power, managers are more likely to invest in larger deals.

Therefore, the US middle market has expanded during the past decade and mega-fund managers have increased investments in the middle market. Additionally, the industry has experienced a rapid expansion in the upper middle market, a moderate growth in the core middle market, and a small decline in the lower middle market.

4.2 Association between Mega-fund Managers' Increasing Investments in the Middle Market and Middle-Market Fund Managers' Investment Opportunities

As presented in section 4.1, average growth rates of mega-fund managers' middle market activities are higher than average growth rates of overall middle market activities. Therefore, mega-fund managers' investments in the middle market have on average outpaced the middle market expansion, in terms of fundraising activities and deal activities. This result signals that middle-market managers' investment opportunities may be negatively impacted by mega-fund managers' new investments.

Additional data analysis has provided more insights into whether mega-fund managers have influenced middle-market managers' investment opportunities. Using two non-parametric methods, Wilcoxon/ Kruskal-Wallis Tests and Median test, I have tested whether there is a significant difference between the yearly proportion of the middle market owned by mega-fund managers before 2008 (not inclusive) and after 2008 (not inclusive) (Table 1). Most of the tests use yearly data from 1995 – 2019. Under circumstances where the early years' data is

insufficient, I perform another test excluding the first few years. I have excluded 2008 data from the test because 2008 data is very volatile due to the financial crisis.

The results suggest that mega-fund managers have taken a greater portion of the middle market after the 2008 financial crisis (Table 1). Mega-fund managers' share of the number of US middle-market deals after 2008 is significantly higher than that before 2008 under both Wilcoxon test and Median test, using data from 1995 to 2019 and data from 2000 to 2019. Secondly, the mega-fund managers' share of US lower middle market deal value after 2008 is significantly higher than that before 2008 under both tests using yearly data from 2000 to 2019. The same result is also demonstrated using the same data under Median test using yearly data from 1995 to 2019. Thirdly, mega-fund managers' proportion of US core middle market deal value after 2008 is significantly higher than the proportion before 2008 under both tests using yearly data from 2000 to 2019. The same result is also given using the same data under Median test using yearly data from 1995 to 2019.

Next, I conduct the tests in different industries. Using Preqin's classification, I categorize the industries as followed: technology sector includes software, technology, electronics, IT securities, hardware, internet, IT Infrastructure, information services, High-Tech, and semiconductors; healthcare sector includes pharmaceuticals, healthcare IT, medical instruments, medical devices, and biotechnology; financial services includes financial services and insurance; consumer retails includes leisure, consumer products, retail, consumer services, education/training, and food; energy sector includes oil and gas, mining, renewable energy, power, utilities, and clean technology; business services includes business services, advertising, and outsourcing; telecom, industrials include logistics, aerospace, environmental services, shipping, industrials,

transportation, and construction (Tables 14 & 15). Table 1 shows that the proportion of mega-fund managers' activities are not significantly different before 2008 and after 2008 for most industries. Mega-fund managers' share of business services deal value after 2008 is significantly different than the share before 2008 under Median test using yearly data from 1995 to 2009. However, there are some data missing between years 1995 to 2002 and the same test proves that the difference is not significant using yearly data from 2002 to 2019.

Comparing the average mega-fund managers' proportion of the middle-market fundraising activities before and after 2008 in industries, I find that average mega-fund managers' share of telecoms, communications and medias fundraising value declined significantly from 14.77% to 9.51% (Figure 16); average mega-fund managers' share of diversified fundraising value declined from 14.59% to 10.72% (Figure 17); average mega-fund managers' share of property, hotels and office fundraising values declined sharply from 18.03% to 9.57% (Figure 22). In addition, I find that average mega-fund managers' share of consumer retails deal value increased drastically from 30.69% before 2008 to 43.06% after 2008 (Figure 27). These average values only provide a reference to trends in the middle market and it is important to note that none of difference in values of the mentioned industries is significant under Wilcoxon test and Median test.

I also study whether middle-market fund managers have had more difficulty with fundraising activities in the past decade by examining the time it takes for middle-market fund managers and mega-fund managers to close funds. As shown in Figure 10 and Figure 11, it takes less time for both middle-market fund managers and mega-fund managers to close funds since 2010. Using Wilcoxon Tests and Median test, I find no difference in the time it takes to close

funds for middle-market managers and mega-fund managers from 2010 to 2019. This shows that the entry of mega-fund managers into the middle market does not make it more difficult for middle-market fund managers to raise more funding.

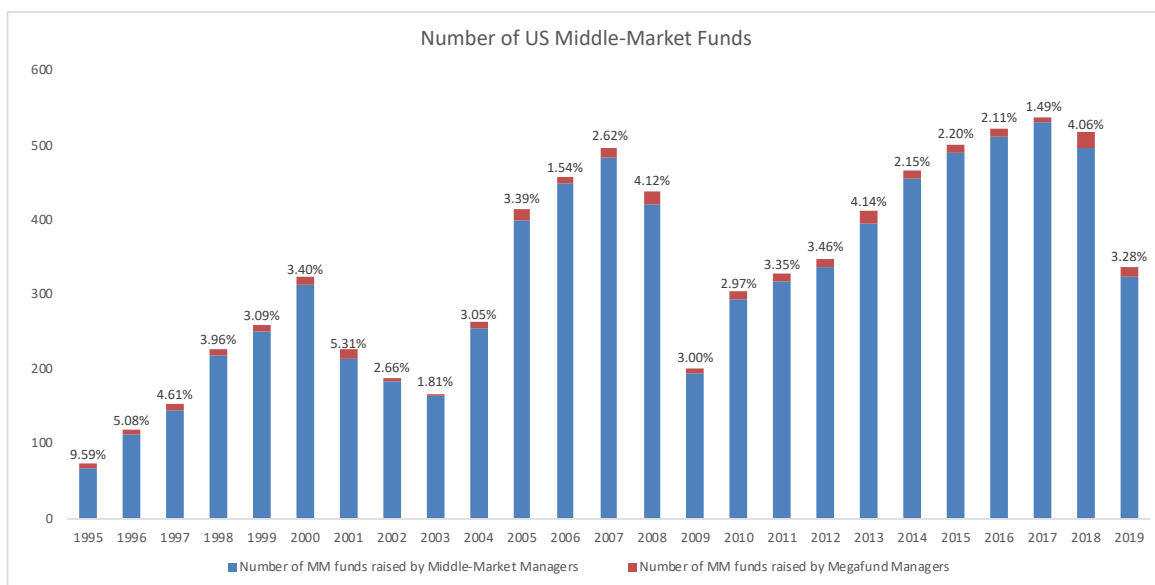
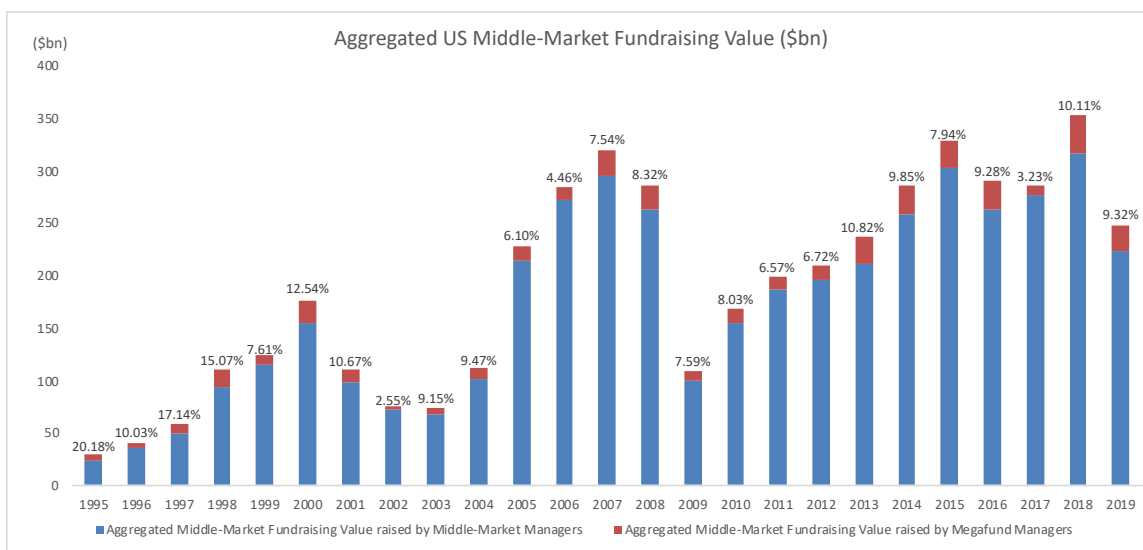
In conclusion, mega-fund managers have taken a greater share of total middle market deal activities after 2008 in terms of deal counts. Therefore, mega-fund managers' increasing investments have squeezed out some middle-market managers' businesses. Additionally, mega-fund managers have also taken a greater portion of deal value in both lower middle market and core middle market after 2008, indicating that mega-fund managers' expansion in the lower and core middle market is associated with less opportunities for middle-market fund managers. Such association is not evident in industry-specific private equity activities.

Interestingly, the average growth rate of first-time middle-market funds raised by middle-market managers is 12.83% and the average growth rate of total first-time middle-market funds is 3.43% since 2010. This is unlikely a contradiction to the hypothesis of this paper because the difference in growth rates can be explained by the fact that some mega-fund managers use their existing mega-funds to carry out middle market deals instead of raising new funds.

SECTION V: CONCLUSION

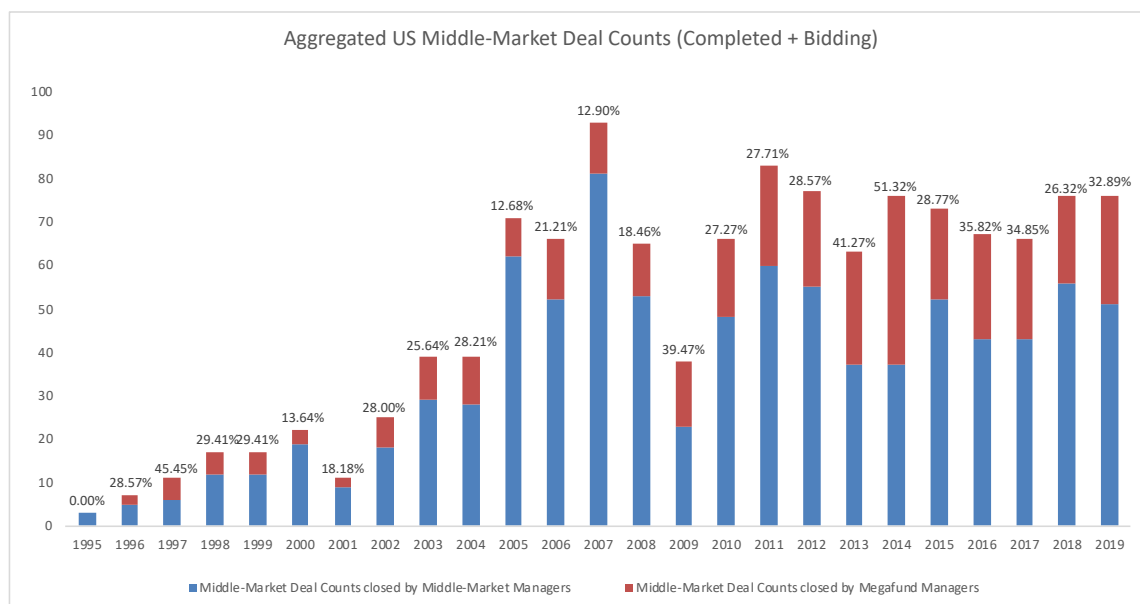
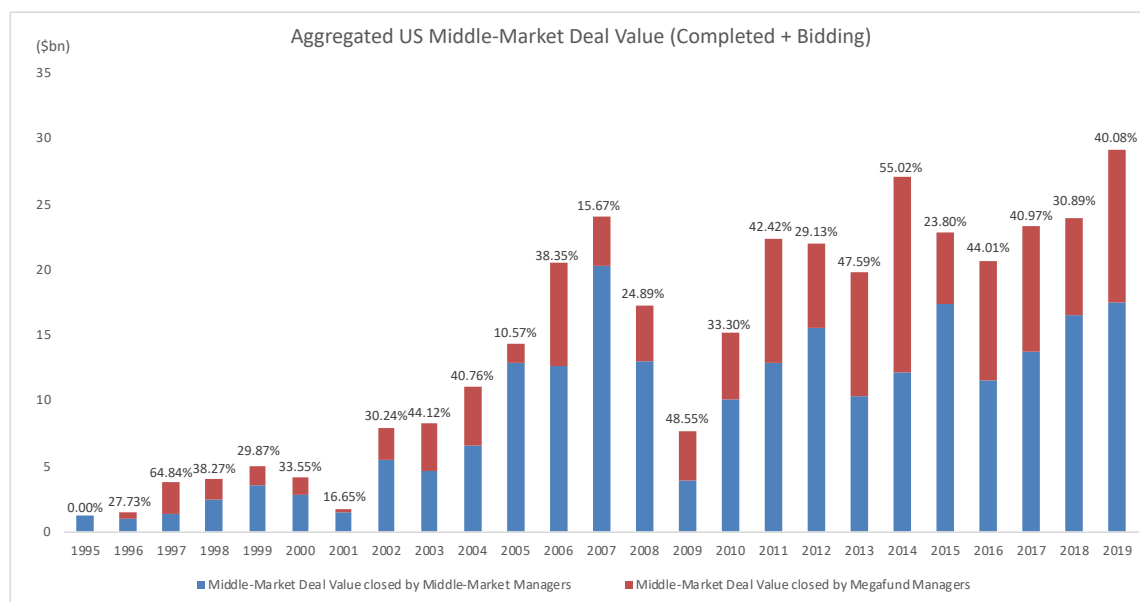
The private equity industry has been constantly evolving for the past several decades, and the middle market has become very popular in recent years. Specifically, we have seen a rapid growth in the upper middle market and moderate growth in the core middle market. The middle market expansion since 2008 is accompanied with increasing mega-fund managers' investments in the middle market. With mega-fund managers playing a greater role in the middle market,

whether they have squeezed out opportunities for middle-market fund managers is the concern of many participants in the private equity field. Evidence in this research has shown that mega-fund managers' expansion in the middle market is associated with less deal opportunities for middle-market managers after 2008, especially in the lower middle market and core middle market. An important question to ask next, is whether mega-fund managers will continue squeezing out middle-market fund managers in the middle market. Mega-fund managers will likely continue investing in the middle market after receiving some promising results, or they may retract their investments knowing that this market has become more efficient according to Jacobius (2014). Further research that dedicates to such question can provide some guidance on future trends of middle-market private equity.

Figure 1⁸**Figure 2⁹**

⁸ Data labels are mega-fund managers' shares of number of middle-market funds.

⁹ Data labels are mega-fund managers' shares of middle-market fundraising value.

Figure 3¹⁰Figure 4¹¹

¹⁰ Bidding deals are included. Historically, the number of rejected and abandoned cases is relatively small compared to number of completed deals; thus, recent bidding deals are most likely going to be completed.

Data labels are mega-fund managers' shares of middle-market deal counts.

¹¹ Data labels are mega-fund managers' shares of middle-market deal value.

Figure 5

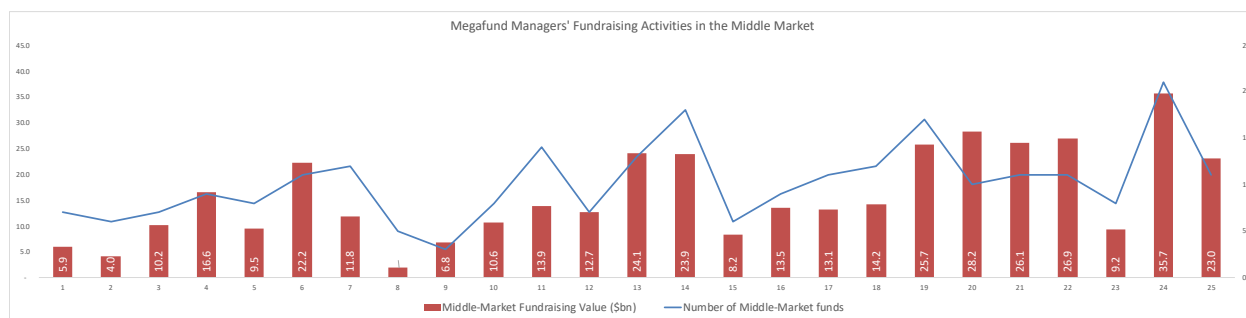
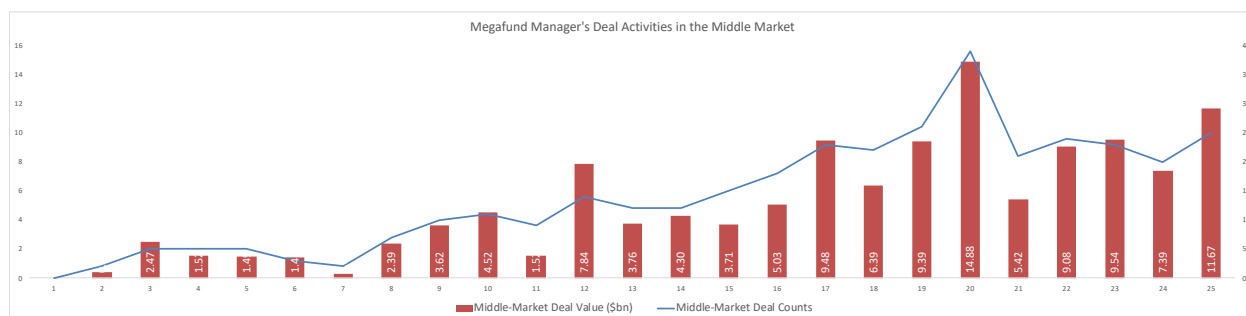
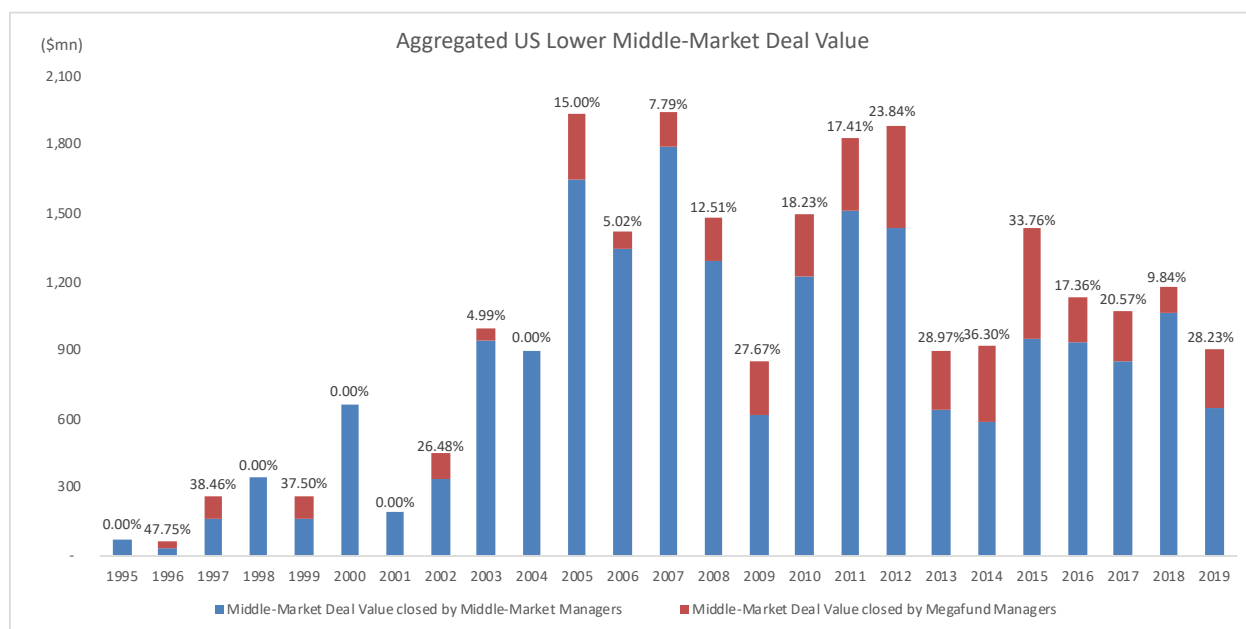


Figure 6

Figure 7¹²

¹² Data labels are mega-fund managers' shares of lower-middle-market deal value.

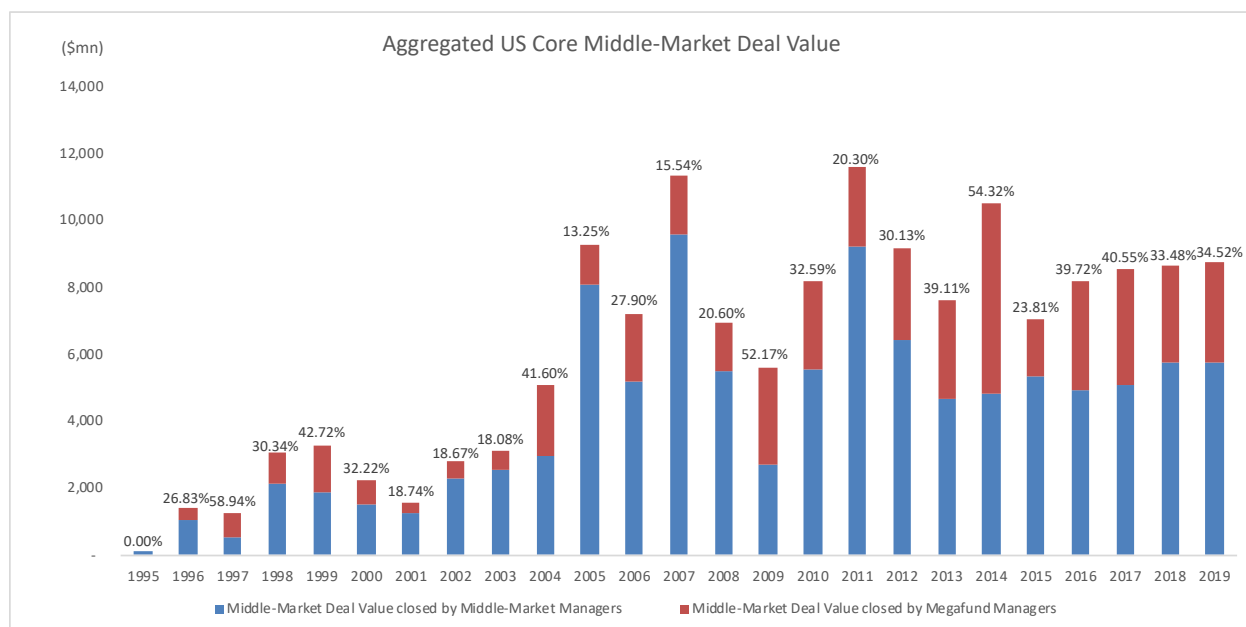
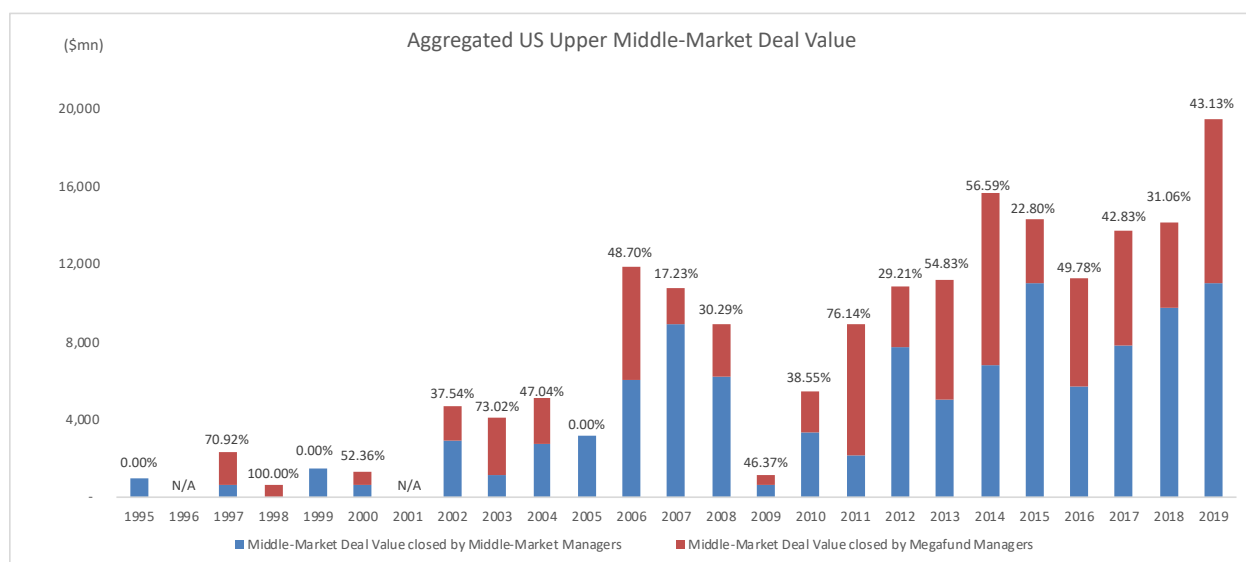
Figure 8¹³Figure 9¹⁴¹³ Data labels are mega-fund managers' shares of core-middle-market deal value.¹⁴ Data labels are mega-fund managers' shares of upper-middle-market deal value.

Figure 10

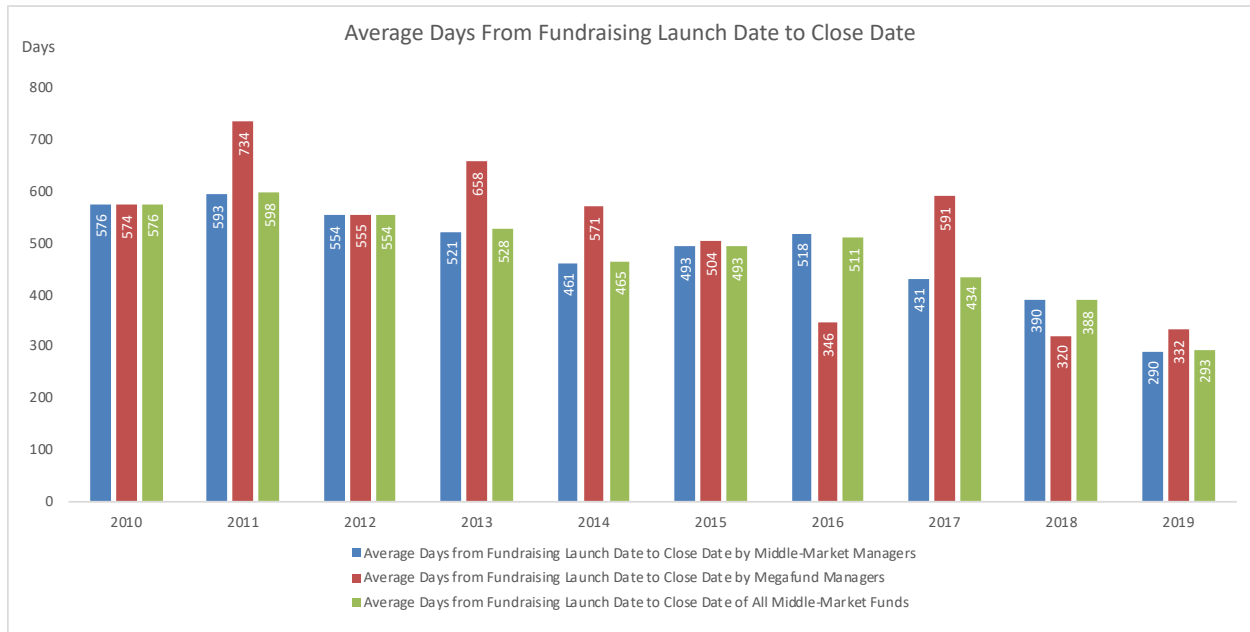


Figure 11

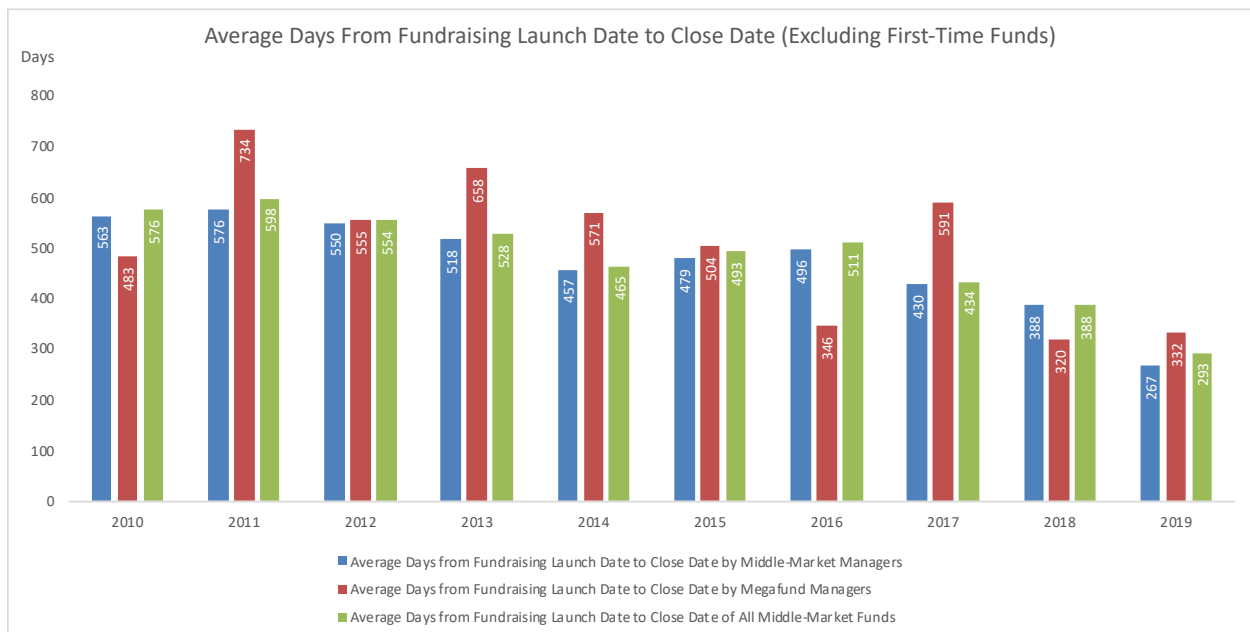


Figure 12

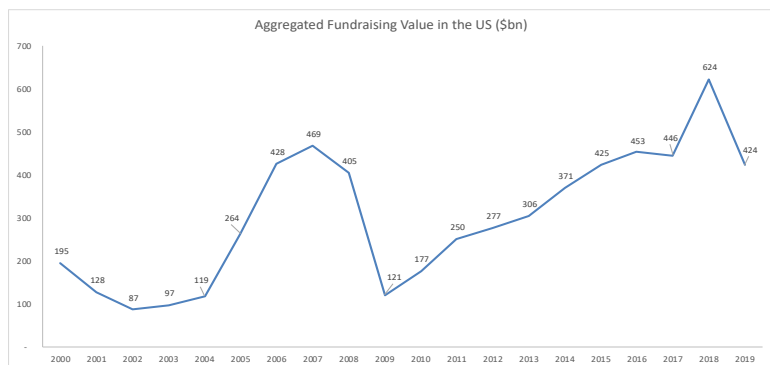
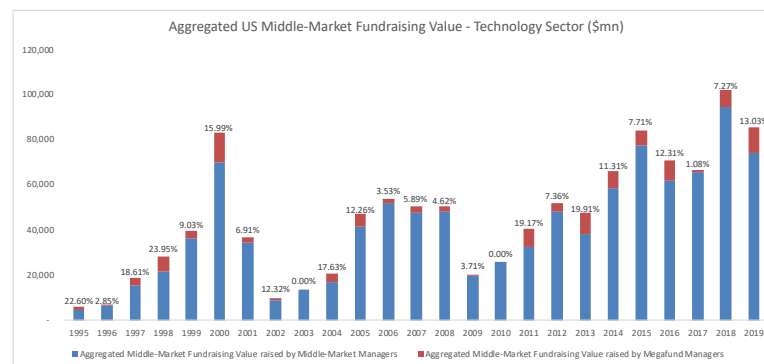
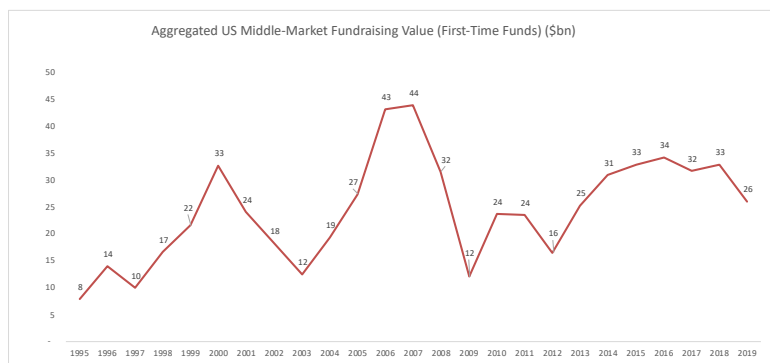
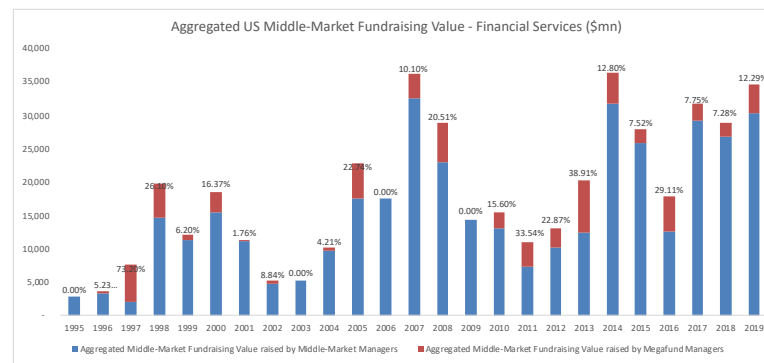
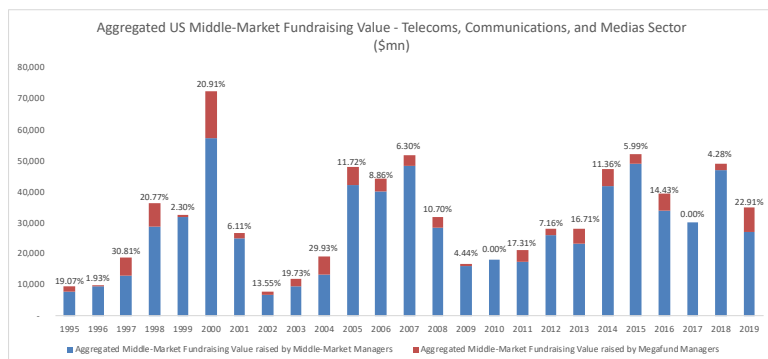
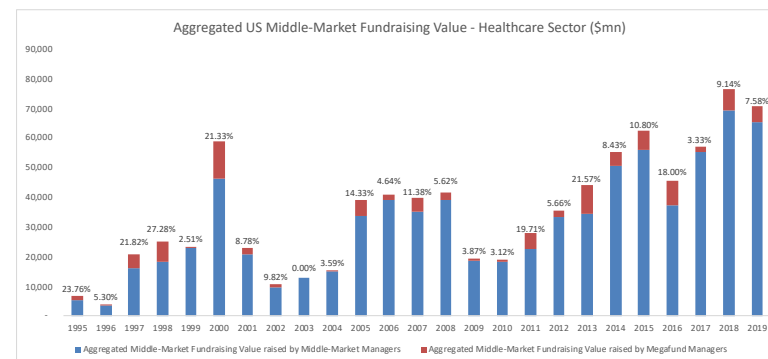
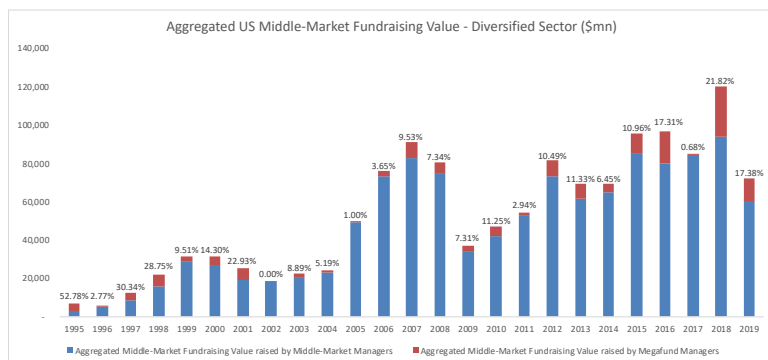
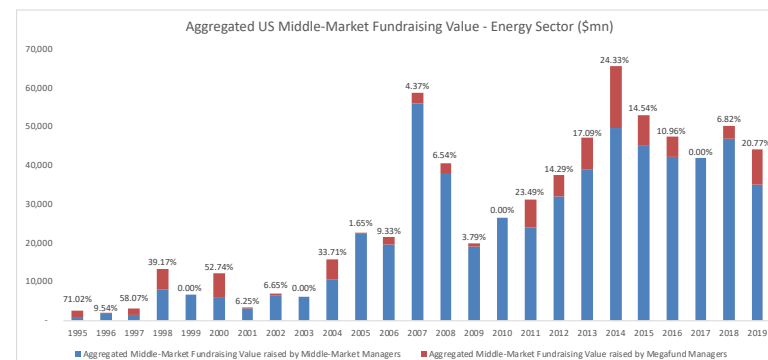
Figure 14¹⁵

Figure 13

Figure 15¹⁶

¹⁵ Data labels are mega-fund managers' shares of technology sector fundraising value.

¹⁶ Data labels are mega-fund managers' shares of financial services sector fundraising value.

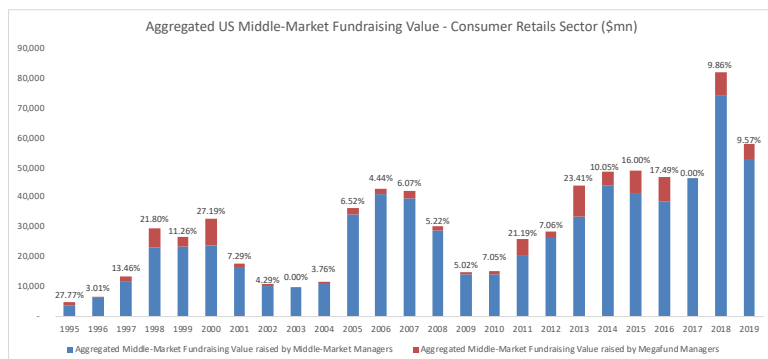
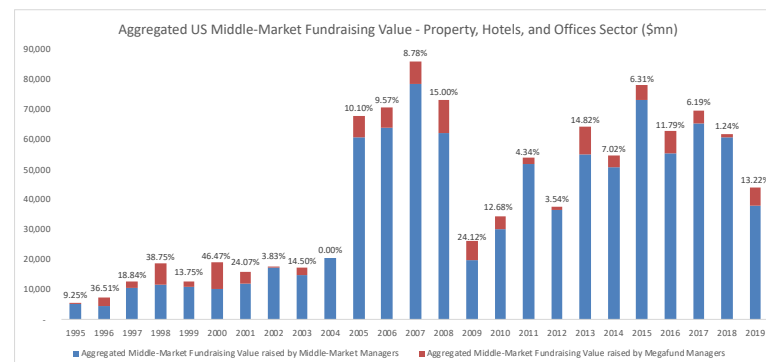
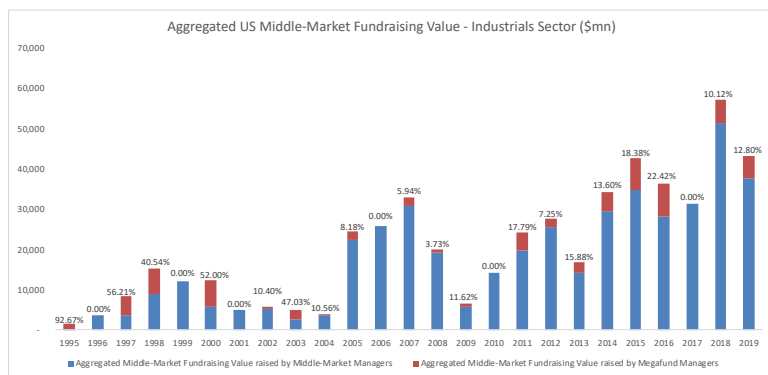
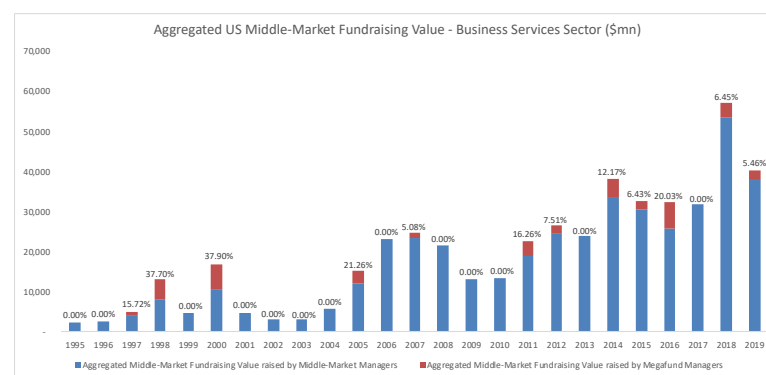
Figure 16¹⁷Figure 18¹⁹Figure 17¹⁸Figure 19²⁰

¹⁷ Data labels are mega-fund managers' shares of telecoms, communications, and medias sector fundraising value.

¹⁸ Data labels are mega-fund managers' shares of diversified sector fundraising value.

¹⁹ Data labels are mega-fund managers' shares of the healthcare sector fundraising value.

²⁰ Data labels are mega-fund managers' shares of energy sector fundraising value.

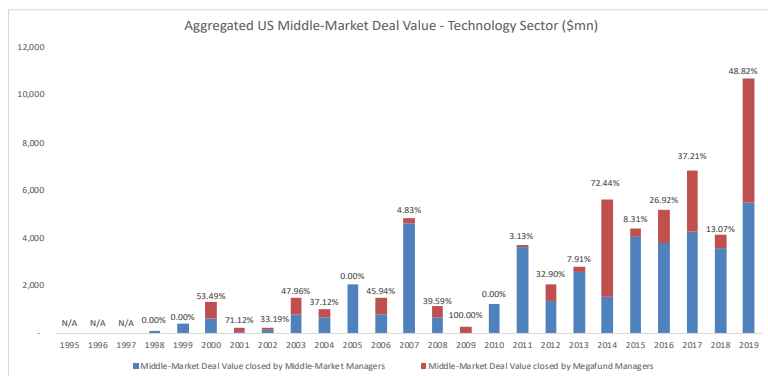
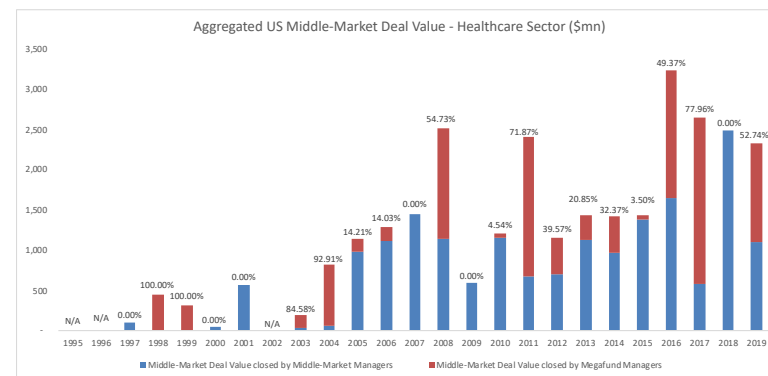
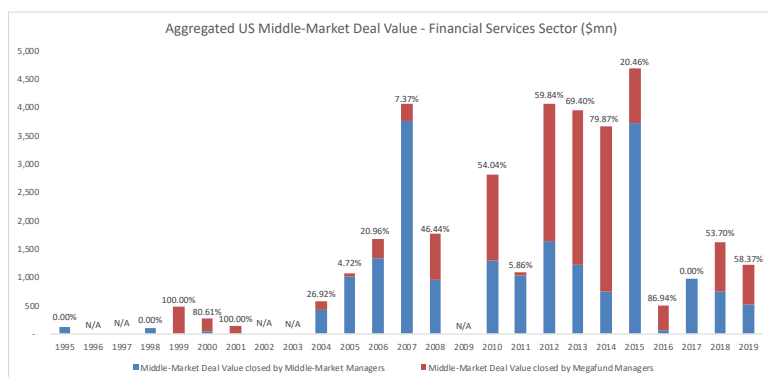
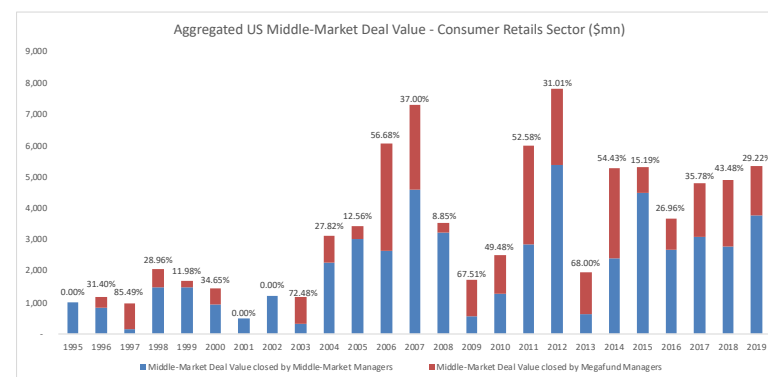
Figure 20²¹Figure 22²³Figure 21²²Figure 23²⁴

²¹ Data labels are mega-fund managers' shares of consumer retails sector fundraising value.

²² Data labels are mega-fund managers' shares of industrials sector fundraising value.

²³ Data labels are mega-fund managers' shares of property, hotels and offices sector fundraising value.

²⁴ Data labels are mega-fund managers' shares of business services sector fundraising value.

Figure 24²⁵Figure 26²⁷Figure 25²⁶Figure 27²⁸

²⁵ Data labels are mega-fund managers' shares of technology sector deal value.

²⁶ Data labels are mega-fund managers' shares of financial services sector deal value.

²⁷ Data labels are mega-fund managers' shares of healthcare sector deal value.

²⁸ Data labels are mega-fund managers' shares of consumer retailers sector deal value.

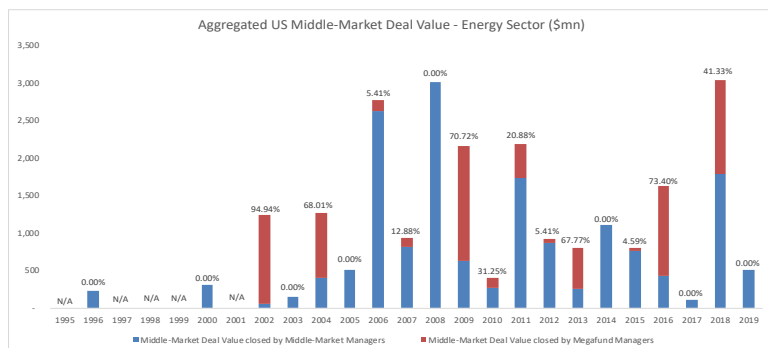
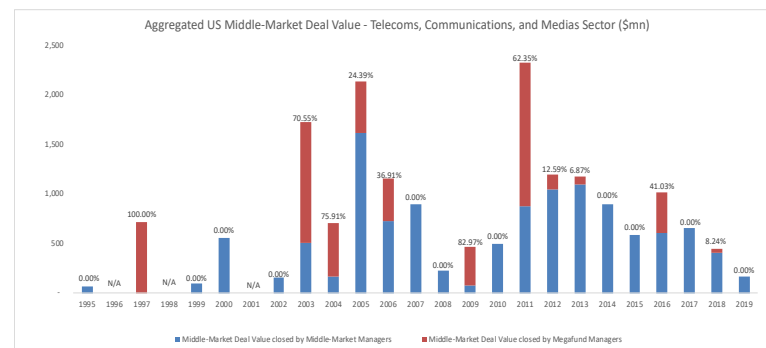
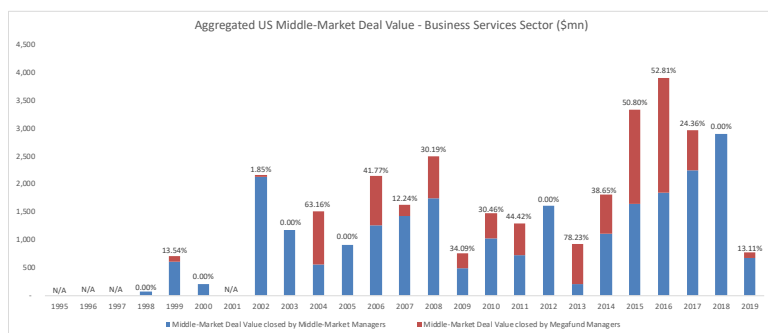
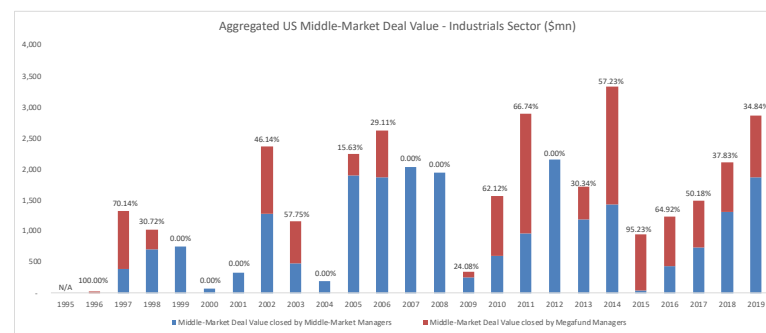
Figure 28²⁹Figure 30³⁰

Figure 29

Figure 31³¹

²⁹ Data labels are mega-fund managers' shares of energy sector deal value.
Data labels are mega-fund managers' shares of business services sector deal value.

³⁰ Data labels are mega-fund managers' shares of telecoms, communications, and medias sector deal value.

³¹ Data labels are mega-fund managers' shares of industrials sector deal value.

Table 1³²

Criteria		Data	Wilcoxon/ Kruskal-Wallis Tests				Median Test		
			Years	Normal Approximation Prob > [Z]	ChiSquare Approximation Prob> ChiSq	Significance	Normal Approximation Prob > [Z]	ChiSquare Approximation Prob> ChiSq	Significance
General		Number of US Middle-Market Funds	1995-2019	0.2710	0.2586	Not Significant	0.6884	0.6884	Not Significant
		Aggregated US Middle-Market Fundraising Value (\$bn)	1995-2019	0.4173	0.4009	Not Significant	0.6884	0.6884	Not Significant
		Number of US Middle-Market Funds Raised (without First-Time)	1995-2019	0.1475	0.1396	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Fundraising Value (without First-Time)(\$bn)	1995-2019	0.3247	0.3106	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Deal Counts	1995-2019	0.0162	0.0149	Significant (Pre-2008 < Post-2008)	0.0449	0.0449	Significant (Pre-2008 < Post-2008)
	2000-2019		0.0020	0.0017	Significant (Pre-2008 < Post-2008)	0.0115	0.0115	Significant (Pre-2008 < Post-2008)	
		Aggregated US Middle-Market Deal Value by US Managers	1995-2019	0.0822	0.0772	Not Significant	0.2289	0.2289	Not Significant
Size		Aggregated US Lower Middle-Market Deal Value (\$mn)	1995-2019	0.0712	0.0668	Not Significant	0.0449	0.0449	Significant (Pre-2008 < Post-2008)
	2000-2019		0.0025	0.0022	Significant (Pre-2008 < Post-2008)	0.0115	0.0115	Significant (Pre-2008 < Post-2008)	
		Aggregated US Core Middle-Market Deal Value (\$mn)	1995-2019	0.0637	0.0597	Not Significant	0.0449	0.0449	Significant (Pre-2008 < Post-2008)
	2000-2019		0.0149	0.0132	Significant (Pre-2008 < Post-2008)	0.0115	0.0115	Significant (Pre-2008 < Post-2008)	
		Aggregated US Upper Middle-Market Deal Value (\$mn)	1995-2019	0.3827	0.3671	Not Significant	0.6884	0.6884	Not Significant
	2000-2019		0.4826	0.4572	Not Significant	0.8488	0.8488	Not Significant	
Industry	Technology	Aggregated US Middle-Market Fundraising Value - Technology (\$mn)	1995-2019	0.6223	0.6020	Not Significant	0.6884	0.6884	Not Significant
		Aggregated US Middle-Market Deal Value - Technology (\$mn)	1995-2019	0.2911	0.2779	Not Significant	0.6884	0.6884	Not Significant
			2000-2019	0.6201	0.5913	Not Significant	0.2729	0.2729	Not Significant
	Healthcare	Aggregated US Middle-Market Fundraising Value - Healthcare (\$mn)	1995-2019	0.6430	0.6224	Not Significant	0.6884	0.6884	Not Significant
		Aggregated US Middle-Market Deal Value - Healthcare (\$mn)	1995-2019	0.4751	0.4569	Not Significant	0.2289	0.2289	Not Significant
			2003-2019	0.7332	0.6909	Not Significant	0.6015	0.6015	Not Significant
	Financial Services	Aggregated US Middle-Market Fundraising Value - Financial Services (\$mn)	1995-2019	0.1549	0.1466	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Deal Value - Financial Services (\$mn)	1995-2019	0.2377	0.2262	Not Significant	0.2289	0.2289	Not Significant
			2004-2019	0.2667	0.2396	Not Significant	0.0348	0.0348	Not Significant
	Consumer Retails	Aggregated US Middle-Market Fundraising Value - Consumer Retails (\$mn)	1995-2019	0.4688	0.4512	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Deal Value - Consumer Retails (\$mn)	1995-2019	0.1823	0.1730	Not Significant	0.2289	0.2289	Not Significant
	Energy	Aggregated US Middle-Market Fundraising Value - Energy (\$mn)	1995-2019	0.8163	0.7939	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Deal Value - Energy (\$mn)	1995-2019	0.4717	0.4460	Not Significant	0.4745	0.4745	Not Significant
			2002-2019	0.9594	0.9189	Not Significant	0.4166	0.4166	Not Significant
		Business Services	Aggregated US Middle-Market Fundraising Value - Business Services (\$mn)	1995-2019	0.5774	0.5564	Not Significant	0.2289	0.2289
	Aggregated US Middle-Market Deal Value - Business Services (\$mn)		1995-2019	0.1059	0.0979	Not Significant	0.0285	0.0285	Significant (Pre-2008 < Post-2008)
			2002-2019	0.3367	0.3119	Not Significant	0.4166	0.4166	Not Significant
	Telecom, Communication s, & Medias (TCM)	Aggregated US Middle-Market Fundraising Value - TCM (\$mn)	1995-2019	0.1643	0.1557	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Deal Value - TCM (\$mn)	1995-2019	0.7656	0.7374	Not Significant	0.8389	0.8389	Not Significant
			2002-2019	0.4348	0.4048	Not Significant	0.2458	0.2458	Not Significant
	Industrials	Aggregated US Middle-Market Fundraising Value - Industrials (\$mn)	1995-2019	1.0000	0.9767	Not Significant	0.2289	0.2289	Not Significant
		Aggregated US Middle-Market Deal Value - Industrials (\$mn)	1996-2019	0.1362	0.1282	Not Significant	0.1552	0.1552	Not Significant
	Diversified	Aggregated US Middle-Market Fundraising Value - Diversified (\$mn)	1995-2019	0.9078	0.8848	Not Significant	0.6884	0.6884	Not Significant
	Property, Hotels, & Offices (PHO)	Aggregated US Middle-Market Fundraising Value - PHO (\$mn)	1995-2019	0.1827	0.1734	Not Significant	0.6884	0.6884	Not Significant

³² All “aggregated deal value” and “aggregated deal counts” data include completed and bidding deals.

Table 2

Number of US Middle-Market Funds					
Year	Number of MM funds raised by Middle-Market Managers	Number of MM funds raised by Megafund Managers	Total Number of Middle-Market Funds	% of Number of Middle Market Funds raised by Megafund Managers	% Growth in Total Number of Middle-Market Funds
1995	66	7	73	9.59%	N/A
1996	112	6	118	5.08%	61.64%
1997	145	7	152	4.61%	28.81%
1998	218	9	227	3.96%	49.34%
1999	251	8	259	3.09%	14.10%
2000	313	11	324	3.40%	25.10%
2001	214	12	226	5.31%	-30.25%
2002	183	5	188	2.66%	-16.81%
2003	163	3	166	1.81%	-11.70%
2004	254	8	262	3.05%	57.83%
2005	399	14	413	3.39%	57.63%
2006	449	7	456	1.54%	10.41%
2007	483	13	496	2.62%	8.77%
2008	419	18	437	4.12%	-11.90%
2009	194	6	200	3.00%	-54.23%
2010	294	9	303	2.97%	51.50%
2011	317	11	328	3.35%	8.25%
2012	335	12	347	3.46%	5.79%
2013	394	17	411	4.14%	18.44%
2014	455	10	465	2.15%	13.14%
2015	489	11	500	2.20%	7.53%
2016	511	11	522	2.11%	4.40%
2017	529	8	537	1.49%	2.87%
2018	496	21	517	4.06%	-3.72%
2019	324	11	335	3.28%	-35.20%
Average Growth 2010-2019					2.39%

Table 3

Aggregated US Middle-Market Fundraising Value (bn)					
Year	Aggregated Middle-Market Fundraising Value raised by Middle-Market Managers	Aggregated Middle-Market Fundraising Value raised by Megafund Managers	Aggregated Middle-Market Fundraising Value	% of MM Fundraising Value raised by Megafund Managers	% Growth in Aggregated Middle-Market Fundraising Value
1995	23	6	29	20.18%	N/A
1996	36	4	40	10.03%	37.51%
1997	49	10	59	17.14%	47.66%
1998	93	17	110	15.07%	85.25%
1999	115	10	125	7.61%	13.57%
2000	155	22	177	12.54%	41.48%
2001	99	12	110	10.67%	-37.53%
2002	73	2	75	2.55%	-32.25%
2003	68	7	75	9.15%	-0.23%
2004	101	11	112	9.47%	50.07%
2005	214	14	228	6.10%	103.19%
2006	272	13	285	4.46%	25.15%
2007	296	24	320	7.54%	12.26%
2008	263	24	287	8.32%	-10.38%
2009	100	8	109	7.59%	-62.14%
2010	155	13	168	8.03%	54.82%
2011	187	13	200	6.57%	18.84%
2012	196	14	211	6.72%	5.47%
2013	212	26	238	10.82%	12.78%
2014	258	28	287	9.85%	20.71%
2015	302	26	329	7.94%	14.61%
2016	263	27	290	9.28%	-11.64%
2017	276	9	286	3.23%	-1.60%
2018	317	36	353	10.11%	23.54%
2019	224	23	247	9.32%	-29.90%
Average Growth 2010-2019					5.87%

Table 4

Number of US Middle-Market Funds Raised (without First-Time Funds)						
Year	Number of MM funds raised by Middle-Market Managers	Number of MM funds raised by Megafund Managers	Total Number of Middle-Market Funds	% of Number of Middle Market Funds raised by Megafund Managers	% Growth in Total Number of Middle-Market Funds	
1995	43	7	50	14.00%	N/A	
1996	67	4	71	5.63%	42.00%	
1997	100	6	106	5.66%	49.30%	
1998	158	9	167	5.39%	57.55%	
1999	195	6	201	2.99%	20.36%	
2000	226	11	237	4.64%	17.91%	
2001	154	12	166	7.23%	-29.96%	
2002	122	5	127	3.94%	-23.49%	
2003	119	3	122	2.46%	-3.94%	
2004	189	6	195	3.08%	59.84%	
2005	322	14	336	4.17%	72.31%	
2006	358	6	364	1.65%	8.33%	
2007	376	12	388	3.09%	6.59%	
2008	341	18	359	5.01%	-7.47%	
2009	155	6	161	3.73%	-55.15%	
2010	234	8	242	3.31%	50.31%	
2011	262	11	273	4.03%	12.81%	
2012	293	11	304	3.62%	11.36%	
2013	332	16	348	4.60%	14.47%	
2014	367	10	377	2.65%	8.33%	
2015	402	10	412	2.43%	9.28%	
2016	413	10	423	2.36%	2.67%	
2017	416	8	424	1.89%	0.24%	
2018	403	20	423	4.73%	-0.24%	
2019	271	11	282	3.90%	-33.33%	
Average Growth 2010-2019						2.84%

Table 5

Aggregated US Middle-Market Fundraising Value (bn) (without First-Time Funds)					
Year	Aggregated Middle-Market Fundraising Value raised by Middle-Market Managers	Aggregated Middle-Market Fundraising Value raised by Megafund Managers	Aggregated Middle-Market Fundraising Value	% of MM Fundraising Value raised by Megafund Managers	% Growth in Aggregated Middle-Market Fundraising Value
1995	15	6	21	27.69%	N/A
1996	23	3	26	11.38%	23.12%
1997	40	10	50	19.97%	88.56%
1998	77	17	93	17.76%	88.62%
1999	97	6	103	5.87%	10.74%
2000	122	22	144	15.38%	39.49%
2001	75	12	86	13.64%	-40.07%
2002	55	2	57	3.36%	-34.42%
2003	55	7	62	10.99%	9.67%
2004	83	9	93	10.22%	49.09%
2005	186	14	200	6.93%	116.09%
2006	230	12	242	4.77%	20.66%
2007	253	23	276	8.32%	14.17%
2008	231	24	255	9.35%	-7.54%
2009	88	8	97	8.53%	-62.17%
2010	132	13	144	8.78%	49.49%
2011	163	13	176	7.45%	22.05%
2012	180	13	194	6.75%	9.89%
2013	188	23	211	11.00%	8.98%
2014	226	28	254	11.10%	20.64%
2015	270	25	296	8.54%	16.23%
2016	233	22	255	8.80%	-13.73%
2017	244	9	253	3.64%	-0.70%
2018	284	35	319	10.90%	25.94%
2019	196	23	219	10.53%	-31.37%
Average Growth 2010-2019					6.44%

Table 6

Aggregated US Middle-Market Fundraising Value (bn) (First-Time Funds Only)				
Year	Aggregated Middle-Market Fundraising Value raised by Middle-Market Managers	% Growth	Aggregated Middle-Market Fundraising Value	% Growth
1995	7,931		8	
1996	12,926	62.97%	14	76.21%
1997	9,600	-25.73%	10	-29.19%
1998	16,667	73.62%	17	68.42%
1999	18,140	8.84%	22	29.48%
2000	32,594	79.68%	33	51.04%
2001	24,025	-26.29%	24	-26.29%
2002	18,146	-24.47%	18	-24.47%
2003	12,494	-31.15%	12	-31.15%
2004	18,220	45.83%	19	54.96%
2005	27,380	50.27%	27	41.42%
2006	42,059	53.61%	43	58.00%
2007	42,784	1.72%	44	1.56%
2008	31,546	-26.27%	32	-28.20%
2009	12,012	-61.92%	12	-61.92%
2010	22,932	90.91%	24	97.70%
2011	23,579	2.82%	24	-0.71%
2012	15,371	-34.81%	16	-30.15%
2013	22,703	47.70%	25	53.03%
2014	30,979	36.45%	31	22.92%
2015	32,010	3.33%	33	6.03%
2016	29,728	-7.13%	34	4.20%
2017	31,765	6.85%	32	-7.20%
2018	31,970	0.65%	33	3.47%
2019	26,062	-18.48%	26	-20.70%
Average Growth 2010-2019		12.83%	3.43%	

Table 7

Aggregated US Middle-Market Deal Counts (Completed + Bidding)					
Year	Middle-Market Deal Counts closed by Middle-Market Managers	Middle-Market Deal Counts closed by Megafund Managers	Middle-Market Deal Counts	% of MM Deal Counts Closed by Megafund Managers	% Growth in Middle-Market Deal Counts
1995	3	0	3	0.00%	N/A
1996	5	2	7	28.57%	133.33%
1997	6	5	11	45.45%	57.14%
1998	12	5	17	29.41%	54.55%
1999	12	5	17	29.41%	0.00%
2000	19	3	22	13.64%	29.41%
2001	9	2	11	18.18%	-50.00%
2002	18	7	25	28.00%	127.27%
2003	29	10	39	25.64%	56.00%
2004	28	11	39	28.21%	0.00%
2005	62	9	71	12.68%	82.05%
2006	52	14	66	21.21%	-7.04%
2007	81	12	93	12.90%	40.91%
2008	53	12	65	18.46%	-30.11%
2009	23	15	38	39.47%	-41.54%
2010	48	18	66	27.27%	73.68%
2011	60	23	83	27.71%	25.76%
2012	55	22	77	28.57%	-7.23%
2013	37	26	63	41.27%	-18.18%
2014	37	39	76	51.32%	20.63%
2015	52	21	73	28.77%	-3.95%
2016	43	24	67	35.82%	-8.22%
2017	43	23	66	34.85%	-1.49%
2018	56	20	76	26.32%	15.15%
2019	51	25	76	32.89%	0.00%
Average Growth 2010-2019					2.50%

Table 8

Aggregated US Middle-Market Deal Value (\$bn) (Completed + Bidding)						
Year	Middle-Market Deal Value closed by Middle-Market Managers	Middle-Market Deal Value closed by Megafund Managers	Middle-Market Deal Value	% of MM Deal Value Closed by Megafund Managers	% Growth in Middle-Market Deal Value	
1995	1.18	0.00	1.18	0.00%	N/A	
1996	1.04	0.40	1.45	27.73%	22.58%	
1997	1.34	2.47	3.81	64.84%	163.70%	
1998	2.45	1.52	3.97	38.27%	4.23%	
1999	3.50	1.49	4.99	29.87%	25.69%	
2000	2.79	1.41	4.20	33.55%	-15.82%	
2001	1.44	0.29	1.73	16.65%	-58.94%	
2002	5.52	2.39	7.91	30.24%	358.38%	
2003	4.59	3.62	8.21	44.12%	3.86%	
2004	6.57	4.52	11.09	40.76%	34.99%	
2005	12.84	1.52	14.36	10.57%	29.54%	
2006	12.61	7.84	20.45	38.35%	42.38%	
2007	20.22	3.76	23.98	15.67%	17.25%	
2008	12.98	4.30	17.28	24.89%	-27.93%	
2009	3.93	3.71	7.64	48.55%	-55.80%	
2010	10.08	5.03	15.12	33.30%	97.90%	
2011	12.87	9.48	22.35	42.42%	47.83%	
2012	15.54	6.39	21.93	29.13%	-1.84%	
2013	10.34	9.39	19.73	47.59%	-10.06%	
2014	12.16	14.88	27.04	55.02%	37.05%	
2015	17.35	5.42	22.77	23.80%	-15.79%	
2016	11.55	9.08	20.63	44.01%	-9.37%	
2017	13.74	9.54	23.28	40.97%	12.83%	
2018	16.54	7.39	23.94	30.89%	2.82%	
2019	17.44	11.67	29.11	40.08%	21.62%	
Average Growth 2010-2019						9.45%

Table 9

Aggregated US Lower Middle-Market Deal Value (mn)						
Year	Middle-Market Deal Value closed by Middle-Market Managers	Middle-Market Deal Value closed by Megafund Managers	Lower Middle-Market Deal Value	% of MM Deal Value Closed by Megafund Managers	% Growth in Total Lower Middle-Market Deal Value	
1995	69	-	69	0.00%	N/A	
1996	33	30	62	47.75%	-9.86%	
1997	160	100	260	38.46%	318.01%	
1998	340	-	340	0.00%	30.93%	
1999	160	96	256	37.50%	-24.80%	
2000	662	-	662	0.00%	158.63%	
2001	193	-	193	0.00%	-70.87%	
2002	332	120	451	26.48%	134.03%	
2003	942	50	992	4.99%	119.79%	
2004	896	-	896	0.00%	-9.67%	
2005	1,643	290	1,933	15.00%	115.75%	
2006	1,344	71	1,415	5.02%	-26.78%	
2007	1,788	151	1,939	7.79%	37.01%	
2008	1,293	185	1,477	12.51%	-23.82%	
2009	613	235	848	27.67%	-42.59%	
2010	1,224	273	1,497	18.23%	76.53%	
2011	1,510	318	1,829	17.41%	22.15%	
2012	1,435	449	1,884	23.84%	3.03%	
2013	637	260	897	28.97%	-52.42%	
2014	584	333	917	36.30%	2.25%	
2015	948	483	1,432	33.76%	56.17%	
2016	933	196	1,130	17.36%	-21.10%	
2017	851	220	1,071	20.57%	-5.18%	
2018	1,059	116	1,174	9.84%	9.64%	
2019	648	255	903	28.23%	-23.08%	
Average Growth 2010-2019						-0.95%

Table 10

Aggregated US Core Middle-Market Deal Value (mn)					
Year	Middle-Market Deal Value closed by Middle-Market Managers	Middle-Market Deal Value closed by Megafund Managers	Core Middle-Market Deal Value	% of MM Deal Value Closed by Megafund Managers	% Growth in Total Core Middle-Market Deal Value
1995	110	-	110	0.00%	N/A
1996	1,012	371	1,383	26.83%	1157.27%
1997	505	725	1,230	58.94%	-11.06%
1998	2,112	920	3,032	30.34%	146.49%
1999	1,871	1,396	3,267	42.72%	7.74%
2000	1,494	710	2,204	32.22%	-32.54%
2001	1,245	287	1,532	18.74%	-30.45%
2002	2,274	522	2,796	18.67%	82.42%
2003	2,534	559	3,093	18.08%	10.63%
2004	2,950	2,101	5,051	41.60%	63.31%
2005	8,044	1,228	9,272	13.25%	83.58%
2006	5,194	2,010	7,204	27.90%	-22.30%
2007	9,545	1,757	11,302	15.54%	56.88%
2008	5,494	1,425	6,918	20.60%	-38.78%
2009	2,680	2,924	5,604	52.17%	-19.00%
2010	5,521	2,669	8,190	32.59%	46.15%
2011	9,222	2,348	11,570	20.30%	41.27%
2012	6,409	2,764	9,173	30.13%	-20.71%
2013	4,634	2,977	7,611	39.11%	-17.03%
2014	4,786	5,692	10,478	54.32%	37.66%
2015	5,341	1,669	7,010	23.81%	-33.09%
2016	4,937	3,253	8,190	39.72%	16.83%
2017	5,064	3,453	8,517	40.55%	3.99%
2018	5,751	2,894	8,645	33.48%	1.51%
2019	5,735	3,023	8,758	34.52%	1.30%
Average Growth 2010-2019					3.52%

Table 11

Aggregated US Upper Middle-Market Deal Value (mn)					
Year	Middle-Market Deal Value closed by Middle-Market Managers	Middle-Market Deal Value closed by Megafund Managers	Upper Middle-Market Deal Value	% of MM Deal Value Closed by Megafund Managers	% Growth in Upper Middle- Market Deal Value
1995	1,000	-	1,000	0.00%	N/A
1996	-	-	-	N/A	-100.00%
1997	675	1,646	2,321	70.92%	N/A
1998	-	600	600	100.00%	-74.15%
1999	1,470	-	1,470	0.00%	145.00%
2000	637	700	1,337	52.36%	-9.06%
2001	-	-	-	N/A	-100.00%
2002	2,912	1,750	4,662	37.54%	N/A
2003	1,114	3,015	4,129	73.02%	-11.43%
2004	2,722	2,419	5,141	47.04%	24.52%
2005	3,158	-	3,158	0.00%	-38.57%
2006	6,069	5,762	11,831	48.70%	274.65%
2007	8,888	1,850	10,738	17.23%	-9.24%
2008	6,194	2,692	8,885	30.29%	-17.25%
2009	636	550	1,186	46.37%	-86.65%
2010	3,336	2,093	5,429	38.55%	357.64%
2011	2,135	6,811	8,946	76.14%	64.80%
2012	7,699	3,176	10,875	29.21%	21.56%
2013	5,068	6,151	11,219	54.83%	3.16%
2014	6,790	8,851	15,641	56.59%	39.41%
2015	11,059	3,265	14,324	22.80%	-8.42%
2016	5,682	5,632	11,314	49.78%	-21.02%
2017	7,828	5,865	13,692	42.83%	21.02%
2018	9,733	4,385	14,118	31.06%	3.11%
2019	11,062	8,390	19,452	43.13%	37.78%
Average Growth 2010-2019					17.94%

Table 12

Average Days From Fundraising Launch Date to Close Date						
Vintage Year	Average Days from Fundraising Launch Date to Close Date by Middle-Market Managers	Average Days from Fundraising Launch Date to Close Date by Megafund Managers	Average Days from Fundraising Launch Date to Close Date of All Middle-Market Funds	Number of MM funds with available data raised by MM Managers	Number of MM funds with available data raised by Megafund Managers	
1995	99	N/A	99	3	0	0
1996	N/A	N/A	N/A	0	0	0
1997	89	N/A	89	1	0	0
1998	365	N/A	365	4	0	0
1999	233	N/A	233	1	0	0
2000	152	N/A	152	4	0	0
2001	456	N/A	456	1	0	0
2002	138	N/A	138	2	0	0
2003	514	N/A	514	9	0	0
2004	308	175	299	14	1	1
2005	333	253	329	41	2	2
2006	464	147	460	70	1	1
2007	380	222	374	137	5	5
2008	441	479	442	130	5	5
2009	558	586	559	64	2	2
2010	576	574	576	122	3	3
2011	593	734	598	142	5	5
2012	554	555	554	145	6	6
2013	521	658	528	177	9	9
2014	461	571	465	175	6	6
2015	493	504	493	160	8	8
2016	518	346	511	154	7	7
2017	431	591	434	142	3	3
2018	390	320	388	139	5	5
2019	290	332	293	74	6	6

Table 13

Average Days From Fundraising Launch Date to Close Date (Excluding First-Time Funds)						
Year	Average Days from Fundraising Launch Date to Close Date by Middle-Market Managers	Average Days from Fundraising Launch Date to Close Date by Megafund Managers	Average Days from Fundraising Launch Date to Close Date of All Middle-Market Funds	Number of MM funds with available data raised by MM Managers	Number of MM funds with available data raised by Megafund Managers	
1995	99	N/A	99	3	0	0
1996	N/A	N/A	N/A	0	0	0
1997	N/A	N/A	89	0	0	0
1998	365	N/A	365	4	0	0
1999	233	N/A	233	1	0	0
2000	152	N/A	152	4	0	0
2001	N/A	N/A	456	0	0	0
2002	138	N/A	138	2	0	0
2003	514	N/A	514	9	0	0
2004	308	175	299	14	1	1
2005	322	253	329	36	2	2
2006	459	147	460	62	1	1
2007	360	222	374	121	5	5
2008	449	479	442	117	5	5
2009	549	586	559	61	2	2
2010	563	483	576	111	2	2
2011	576	734	598	135	5	5
2012	550	555	554	136	6	6
2013	518	658	528	159	9	9
2014	457	571	465	161	6	6
2015	479	504	493	151	8	8
2016	496	346	511	136	7	7
2017	430	591	434	128	3	3
2018	388	320	388	122	5	5
2019	267	332	293	60	6	6

Table 14

Aggregated Middle-Market Fundraising Value by Industry (\$mn)				
Year	Aggregated Middle-Market Fundraising Value raised by Middle-Market Managers	Aggregated Middle-Market Fundraising Value raised by Megafund Managers	Aggregated Middle-Market Fundraising Value	% of MM Fundraising Value raised by Megafund Managers
Technology				
1995	4,554	1,330	5,884	22.60%
1996	6,377	187	6,564	2.85%
1997	15,350	3,510	18,860	18.61%
1998	21,561	6,791	28,352	23.95%
1999	35,999	3,572	39,571	9.03%
2000	69,582	13,244	82,826	15.99%
2001	34,112	2,534	36,645	6.91%
2002	8,699	1,222	9,921	12.32%
2003	13,733	-	13,733	0.00%
2004	16,824	3,600	20,424	17.63%
2005	41,184	5,755	46,938	12.26%
2006	51,925	1,900	53,825	3.53%
2007	47,480	2,969	50,449	5.89%
2008	48,077	2,329	50,406	4.62%
2009	19,466	750	20,216	3.71%
2010	26,011	-	26,011	0.00%
2011	32,536	7,715	40,250	19.17%
2012	48,114	3,820	51,935	7.36%
2013	37,934	9,428	47,362	19.91%
2014	58,542	7,462	66,004	11.31%
2015	77,542	6,480	84,022	7.71%
2016	61,912	8,693	70,605	12.31%
2017	65,644	720	66,364	1.08%
2018	94,336	7,400	101,736	7.27%
2019	74,069	11,099	85,167	13.03%
Financial Services				
1995	2,826	-	2,826	0.00%
1996	3,387	187	3,574	5.23%
1997	2,032	5,550	7,582	73.20%
1998	14,671	5,182	19,853	26.10%
1999	11,337	750	12,087	6.20%
2000	15,425	3,019	18,444	16.37%
2001	11,075	198	11,273	1.76%
2002	4,704	456	5,160	8.84%
2003	5,236	-	5,236	0.00%
2004	9,745	428	10,172	4.21%
2005	17,592	5,178	22,770	22.74%
2006	17,478	-	17,478	0.00%
2007	32,616	3,664	36,280	10.10%
2008	22,973	5,929	28,902	20.51%
2009	14,383	-	14,383	0.00%
2010	12,988	2,400	15,388	15.60%
2011	7,314	3,691	11,005	33.54%
2012	10,119	3,000	13,119	22.87%
2013	12,352	7,868	20,219	38.91%
2014	31,746	4,662	36,408	12.80%
2015	25,819	2,100	27,919	7.52%
2016	12,618	5,182	17,800	29.11%
2017	29,249	2,457	31,706	7.75%
2018	26,750	2,100	28,850	7.28%
2019	30,330	4,250	34,580	12.29%

Telecoms, Communications, and Medias				
1995	7,768	1,830	9,598	19.07%
1996	9,496	187	9,683	1.93%
1997	12,937	5,760	18,697	30.81%
1998	28,823	7,555	36,378	20.77%
1999	31,843	750	32,593	2.30%
2000	57,089	15,091	72,181	20.91%
2001	25,056	1,630	26,686	6.11%
2002	6,751	1,058	7,809	13.55%
2003	9,497	2,334	11,831	19.73%
2004	13,463	5,750	19,213	29.93%
2005	42,270	5,614	47,884	11.72%
2006	40,136	3,900	44,036	8.86%
2007	48,432	3,257	51,690	6.30%
2008	28,351	3,397	31,748	10.70%
2009	16,154	750	16,904	4.44%
2010	18,259	-	18,259	0.00%
2011	17,462	3,656	21,118	17.31%
2012	25,934	2,000	27,934	7.16%
2013	23,420	4,698	28,118	16.71%
2014	41,922	5,370	47,293	11.36%
2015	49,090	3,130	52,220	5.99%
2016	33,771	5,693	39,463	14.43%
2017	30,178	-	30,178	0.00%
2018	46,954	2,100	49,054	4.28%
2019	26,910	7,999	34,909	22.91%
Diversified				
1995	3,177	3,550	6,727	52.78%
1996	5,255	150	5,405	2.77%
1997	8,611	3,750	12,361	30.34%
1998	15,815	6,380	22,195	28.75%
1999	28,392	2,985	31,377	9.51%
2000	26,975	4,500	31,475	14.30%
2001	19,298	5,742	25,040	22.93%
2002	18,841	-	18,841	0.00%
2003	20,519	2,001	22,520	8.89%
2004	23,040	1,260	24,300	5.19%
2005	49,493	500	49,993	1.00%
2006	73,484	2,783	76,267	3.65%
2007	82,802	8,724	91,526	9.53%
2008	74,909	5,933	80,843	7.34%
2009	34,307	2,705	37,012	7.31%
2010	41,947	5,319	47,266	11.25%
2011	52,547	1,590	54,137	2.94%
2012	73,413	8,603	82,016	10.49%
2013	61,365	7,843	69,208	11.33%
2014	64,927	4,479	69,405	6.45%
2015	85,145	10,476	95,621	10.96%
2016	79,887	16,719	96,607	17.31%
2017	84,477	577	85,055	0.68%
2018	93,885	26,206	120,091	21.82%
2019	59,884	12,600	72,484	17.38%

Healthcare				
1995	5,231	1,630	6,861	23.76%
1996	3,338	187	3,525	5.30%
1997	16,157	4,510	20,667	21.82%
1998	18,101	6,791	24,892	27.28%
1999	22,823	587	23,410	2.51%
2000	46,359	12,566	58,925	21.33%
2001	20,878	2,009	22,887	8.78%
2002	9,712	1,058	10,770	9.82%
2003	12,781	-	12,781	0.00%
2004	14,840	553	15,393	3.59%
2005	33,552	5,614	39,166	14.33%
2006	39,068	1,900	40,968	4.64%
2007	35,200	4,521	39,722	11.38%
2008	39,084	2,329	41,413	5.62%
2009	18,631	750	19,381	3.87%
2010	18,189	585	18,774	3.12%
2011	22,374	5,491	27,865	19.71%
2012	33,331	2,000	35,331	5.66%
2013	34,460	9,478	43,938	21.57%
2014	50,632	4,662	55,293	8.43%
2015	55,778	6,750	62,528	10.80%
2016	37,271	8,182	45,453	18.00%
2017	55,247	1,901	57,148	3.33%
2018	69,339	6,972	76,310	9.14%
2019	65,196	5,350	70,546	7.58%
Energy				
1995	747	1,830	2,577	71.02%
1996	1,773	187	1,960	9.54%
1997	1,300	1,800	3,100	58.07%
1998	8,047	5,182	13,229	39.17%
1999	6,571	-	6,571	0.00%
2000	5,736	6,400	12,136	52.74%
2001	2,972	198	3,170	6.25%
2002	6,402	456	6,858	6.65%
2003	6,108	-	6,108	0.00%
2004	10,465	5,322	15,787	33.71%
2005	22,331	375	22,706	1.65%
2006	19,435	2,000	21,435	9.33%
2007	56,049	2,564	58,613	4.37%
2008	37,861	2,651	40,511	6.54%
2009	19,031	750	19,781	3.79%
2010	26,492	-	26,492	0.00%
2011	23,904	7,339	31,243	23.49%
2012	32,046	5,342	37,388	14.29%
2013	38,973	8,034	47,007	17.09%
2014	49,593	15,942	65,535	24.33%
2015	45,271	7,700	52,971	14.54%
2016	42,097	5,182	47,279	10.96%
2017	41,996	-	41,996	0.00%
2018	46,793	3,427	50,220	6.82%
2019	34,905	9,150	44,055	20.77%

Consumer Retails				
1995	3,459	1,330	4,789	27.77%
1996	6,027	187	6,214	3.01%
1997	11,571	1,800	13,371	13.46%
1998	22,952	6,399	29,351	21.80%
1999	23,527	2,985	26,512	11.26%
2000	23,834	8,900	32,734	27.19%
2001	16,333	1,285	17,618	7.29%
2002	10,172	456	10,628	4.29%
2003	9,717	-	9,717	0.00%
2004	10,967	428	11,395	3.76%
2005	34,030	2,372	36,402	6.52%
2006	40,934	1,900	42,834	4.44%
2007	39,658	2,564	42,222	6.07%
2008	28,726	1,583	30,309	5.22%
2009	14,182	750	14,932	5.02%
2010	14,206	1,078	15,284	7.05%
2011	20,428	5,491	25,919	21.19%
2012	26,317	2,000	28,317	7.06%
2013	33,619	10,276	43,894	23.41%
2014	43,828	4,897	48,725	10.05%
2015	41,224	7,850	49,074	16.00%
2016	38,595	8,182	46,777	17.49%
2017	46,257	-	46,257	0.00%
2018	74,051	8,100	82,151	9.86%
2019	52,453	5,550	58,003	9.57%
Industrials				
1995	105	1,330	1,435	92.67%
1996	3,613	-	3,613	0.00%
1997	3,709	4,760	8,469	56.21%
1998	9,029	6,156	15,185	40.54%
1999	12,194	-	12,194	0.00%
2000	5,907	6,400	12,307	52.00%
2001	4,880	-	4,880	0.00%
2002	5,186	602	5,788	10.40%
2003	2,629	2,334	4,963	47.03%
2004	3,625	428	4,053	10.56%
2005	22,421	1,997	24,418	8.18%
2006	25,959	-	25,959	0.00%
2007	30,971	1,957	32,928	5.94%
2008	19,285	746	20,031	3.73%
2009	5,704	750	6,454	11.62%
2010	14,301	-	14,301	0.00%
2011	19,843	4,294	24,137	17.79%
2012	25,604	2,000	27,604	7.25%
2013	14,294	2,698	16,992	15.88%
2014	29,625	4,662	34,287	13.60%
2015	34,857	7,850	42,707	18.38%
2016	28,307	8,182	36,489	22.42%
2017	31,452	-	31,452	0.00%
2018	51,536	5,800	57,336	10.12%
2019	37,821	5,550	43,371	12.80%

Property, Hotels, and Offices				
1995	5,148	525	5,673	9.25%
1996	4,609	2,650	7,259	36.51%
1997	10,449	2,425	12,874	18.84%
1998	11,477	7,261	18,738	38.75%
1999	10,988	1,752	12,740	13.75%
2000	10,171	8,831	19,002	46.47%
2001	11,951	3,789	15,740	24.07%
2002	17,155	683	17,838	3.83%
2003	14,745	2,500	17,245	14.50%
2004	20,341	-	20,341	0.00%
2005	60,728	6,824	67,552	10.10%
2006	63,674	6,736	70,409	9.57%
2007	78,167	7,523	85,690	8.78%
2008	61,970	10,933	72,903	15.00%
2009	19,756	6,280	26,036	24.12%
2010	30,063	4,366	34,429	12.68%
2011	51,630	2,340	53,970	4.34%
2012	36,303	1,330	37,633	3.54%
2013	54,784	9,529	64,313	14.82%
2014	50,577	3,821	54,398	7.02%
2015	73,183	4,930	78,113	6.31%
2016	55,342	7,397	62,739	11.79%
2017	65,071	4,297	69,368	6.19%
2018	60,724	765	61,489	1.24%
2019	38,049	5,799	43,848	13.22%
Business Services				
1995	2,276	-	2,276	0.00%
1996	2,701	-	2,701	0.00%
1997	4,288	800	5,088	15.72%
1998	8,263	5,000	13,263	37.70%
1999	4,668	-	4,668	0.00%
2000	10,488	6,400	16,888	37.90%
2001	4,748	-	4,748	0.00%
2002	3,205	-	3,205	0.00%
2003	3,055	-	3,055	0.00%
2004	5,787	-	5,787	0.00%
2005	12,008	3,242	15,251	21.26%
2006	23,168	-	23,168	0.00%
2007	23,603	1,264	24,867	5.08%
2008	21,524	-	21,524	0.00%
2009	13,126	-	13,126	0.00%
2010	13,498	-	13,498	0.00%
2011	19,005	3,691	22,696	16.26%
2012	24,642	2,000	26,642	7.51%
2013	23,988	-	23,988	0.00%
2014	33,641	4,662	38,303	12.17%
2015	30,577	2,100	32,677	6.43%
2016	25,988	6,511	32,499	20.03%
2017	31,948	-	31,948	0.00%
2018	53,700	3,700	57,400	6.45%
2019	38,071	2,200	40,271	5.46%

Table 15

Aggregated Middle-Market Deal Value by Industry (\$mn)				
Year	Middle-Market Deal Value closed by Middle-Market Managers	Middle-Market Deal Value closed by Megafund Managers	Middle-Market Deal Value	% of MM Deal Value Closed by Megafund Managers
Technology				
1995	-	-	-	N/A
1996	-	-	-	N/A
1997	-	-	-	N/A
1998	106	-	106	0.00%
1999	415	-	415	0.00%
2000	609	700	1,309	53.49%
2001	63	156	219	71.12%
2002	160	80	240	33.19%
2003	778	717	1,495	47.96%
2004	642	379	1,021	37.12%
2005	2,037	-	2,037	0.00%
2006	794	675	1,469	45.94%
2007	4,604	234	4,838	4.83%
2008	684	448	1,132	39.59%
2009	-	294	294	100.00%
2010	1,235	-	1,235	0.00%
2011	3,596	116	3,712	3.13%
2012	1,377	675	2,052	32.90%
2013	2,563	220	2,783	7.91%
2014	1,547	4,066	5,613	72.44%
2015	4,046	367	4,413	8.31%
2016	3,786	1,395	5,181	26.92%
2017	4,284	2,539	6,823	37.21%
2018	3,584	539	4,123	13.07%
2019	5,464	5,211	10,674	48.82%
Financial Services				
1995	110	-	110	0.00%
1996	-	-	-	N/A
1997	-	-	-	N/A
1998	100	-	100	0.00%
1999	-	480	480	100.00%
2000	51	210	261	80.61%
2001	-	131	131	100.00%
2002	-	-	-	N/A
2003	-	-	-	N/A
2004	421	155	576	26.92%
2005	1,009	50	1,059	4.72%
2006	1,327	352	1,679	20.96%
2007	3,769	300	4,069	7.37%
2008	946	820	1,766	46.44%
2009	-	-	-	N/A
2010	1,291	1,518	2,809	54.04%
2011	1,023	64	1,087	5.86%
2012	1,635	2,437	4,072	59.84%
2013	1,210	2,744	3,954	69.40%
2014	738	2,928	3,667	79.87%
2015	3,727	959	4,686	20.46%
2016	65	432	497	86.94%
2017	969	-	969	0.00%
2018	746	865	1,612	53.70%
2019	510	715	1,225	58.37%

Healthcare				
1995	-	-	-	N/A
1996	-	-	-	N/A
1997	100	-	100	0.00%
1998	-	440	440	100.00%
1999	-	314	314	100.00%
2000	41	-	41	0.00%
2001	560	-	560	0.00%
2002	-	-	-	N/A
2003	30	165	195	84.58%
2004	58	760	818	92.91%
2005	978	162	1,140	14.21%
2006	1,109	181	1,290	14.03%
2007	1,446	-	1,446	0.00%
2008	1,139	1,377	2,516	54.73%
2009	592	0.00	592	0.00%
2010	1,146	54.50	1,201	4.54%
2011	677	1729.80	2,407	71.87%
2012	696	455.50	1,151	39.57%
2013	1,129	297.53	1,427	20.85%
2014	963	461.00	1,424	32.37%
2015	1,380	50.00	1,430	3.50%
2016	1,639	1598.00	3,237	49.37%
2017	584	2066.46	2,651	77.96%
2018	2,490	0.00	2,490	0.00%
2019	1,099	1226.67	2,326	52.74%
Consumer Retails				
1995	1,000	-	1,000	0.00%
1996	811	371	1,182	31.40%
1997	140	825	965	85.49%
1998	1,472	600	2,072	28.96%
1999	1,470	200	1,670	11.98%
2000	943	500	1,443	34.65%
2001	477	-	477	0.00%
2002	1,187	-	1,187	0.00%
2003	325	857	1,182	72.48%
2004	2,264	873	3,136	27.82%
2005	3,010	432	3,443	12.56%
2006	2,625	3,434	6,059	56.68%
2007	4,602	2,703	7,305	37.00%
2008	3,210	312	3,522	8.85%
2009	556	1,154	1,710	67.51%
2010	1,264	1,238	2,501	49.48%
2011	2,841	3,151	5,992	52.58%
2012	5,387	2,421	7,808	31.01%
2013	622	1,321	1,942	68.00%
2014	2,413	2,882	5,294	54.43%
2015	4,504	807	5,311	15.19%
2016	2,674	987	3,660	26.96%
2017	3,087	1,720	4,807	35.78%
2018	2,769	2,130	4,898	43.48%
2019	3,787	1,563	5,350	29.22%

Energy				
1995	-	-	-	N/A
1996	234	-	234	0.00%
1997	-	-	-	N/A
1998	-	-	-	N/A
1999	-	-	-	N/A
2000	310	-	310	0.00%
2001	-	-	-	N/A
2002	63	1,180	1,243	94.94%
2003	150	-	150	0.00%
2004	405	861	1,266	68.01%
2005	506	-	506	0.00%
2006	2,624	150	2,774	5.41%
2007	812	120	932	12.88%
2008	3,012	-	3,012	0.00%
2009	635	1,533	2,168	70.72%
2010	275	125	400	31.25%
2011	1,736	458	2,194	20.88%
2012	874	50	924	5.41%
2013	258	543	801	67.77%
2014	1,115	-	1,115	0.00%
2015	768	37	805	4.59%
2016	433	1,195	1,628	73.40%
2017	113	-	113	0.00%
2018	1,789	1,260	3,049	41.33%
2019	505	-	505	0.00%
Business Services				
1995	-	-	-	N/A
1996	-	-	-	N/A
1997	-	-	-	N/A
1998	64	-	64	0.00%
1999	613	96	709	13.54%
2000	210	-	210	0.00%
2001	-	-	-	N/A
2002	2,126	40	2,166	1.85%
2003	1,177	-	1,177	0.00%
2004	558	956	1,514	63.16%
2005	915	-	915	0.00%
2006	1,254	900	2,154	41.77%
2007	1,434	200	1,634	12.24%
2008	1,748	756	2,504	30.19%
2009	493	255	748	34.09%
2010	1,025	449	1,474	30.46%
2011	723	578	1,300	44.42%
2012	1,611	-	1,611	0.00%
2013	200	719	919	78.23%
2014	1,108	698	1,805	38.65%
2015	1,639	1,692	3,332	50.80%
2016	1,846	2,066	3,911	52.81%
2017	2,240	721	2,961	24.36%
2018	2,899	-	2,899	0.00%
2019	669	101	770	13.11%

Telecoms, Communications, and Medias				
1995	69	-	69	0.00%
1996	-	-	-	N/A
1997	-	718	718	100.00%
1998	-	-	-	N/A
1999	100	-	100	0.00%
2000	555	-	555	0.00%
2001	-	-	-	N/A
2002	152	-	152	0.00%
2003	508	1,217	1,725	70.55%
2004	170	536	706	75.91%
2005	1,618	522	2,140	24.39%
2006	730	427	1,157	36.91%
2007	893	-	893	0.00%
2008	223	-	223	0.00%
2009	80	390	470	82.97%
2010	500	-	500	0.00%
2011	877	1,452	2,329	62.35%
2012	1,045	151	1,196	12.59%
2013	1,100	81	1,181	6.87%
2014	898	-	898	0.00%
2015	588	-	588	0.00%
2016	602	419	1,021	41.03%
2017	656	-	656	0.00%
2018	410	37	447	8.24%
2019	166	-	166	0.00%
Industrials				
1995	-	-	-	N/A
1996	-	30	30	100.00%
1997	395	928	1,323	70.14%
1998	710	315	1,025	30.72%
1999	753	-	753	0.00%
2000	75	-	75	0.00%
2001	338	-	338	0.00%
2002	1,275	1,092	2,367	46.14%
2003	489	668	1,156	57.75%
2004	197	-	197	0.00%
2005	1,900	352	2,252	15.63%
2006	1,862	765	2,627	29.11%
2007	2,039	-	2,039	0.00%
2008	1,938	-	1,938	0.00%
2009	259	82	341	24.08%
2010	597	978	1,575	62.12%
2011	962	1,930	2,892	66.74%
2012	2,153	-	2,153	0.00%
2013	1,193	519	1,712	30.34%
2014	1,426	1,908	3,334	57.23%
2015	45	898	943	95.23%
2016	432	800	1,232	64.92%
2017	745	751	1,496	50.18%
2018	1,315	800	2,115	37.83%
2019	1,870	1,000	2,870	34.84%

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